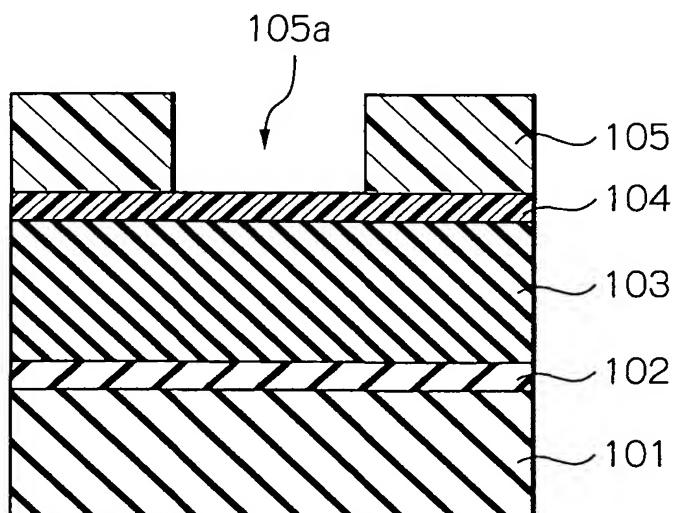
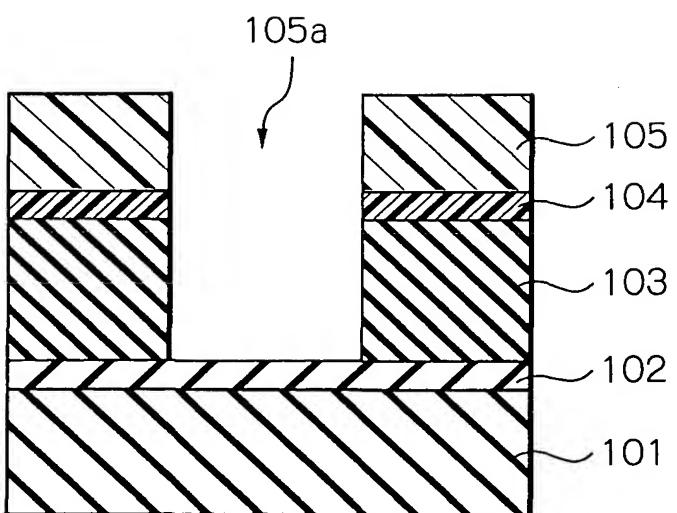


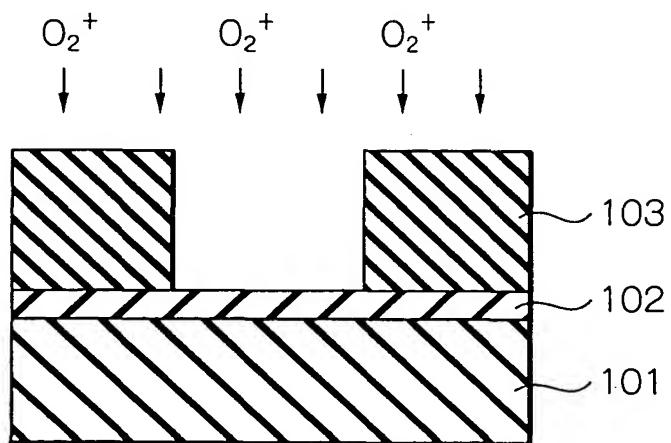
*Fig. 1A*      PRIOR ART



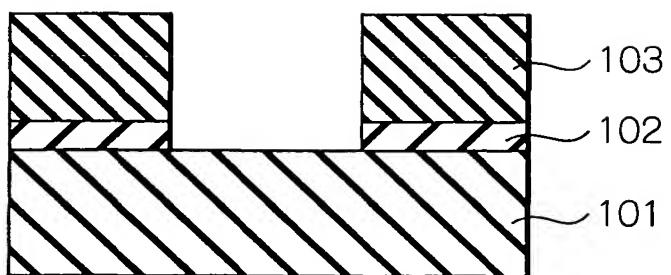
*Fig. 1B*      PRIOR ART



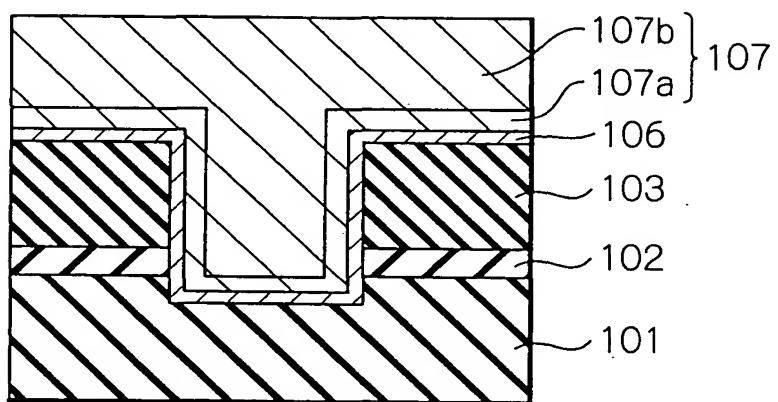
*Fig. 1C*      PRIOR ART



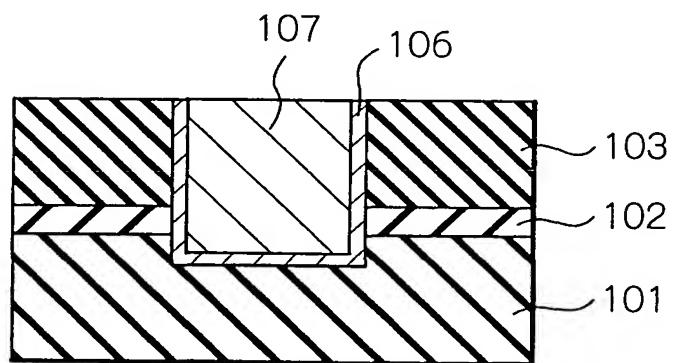
*Fig. 1D*      PRIOR ART



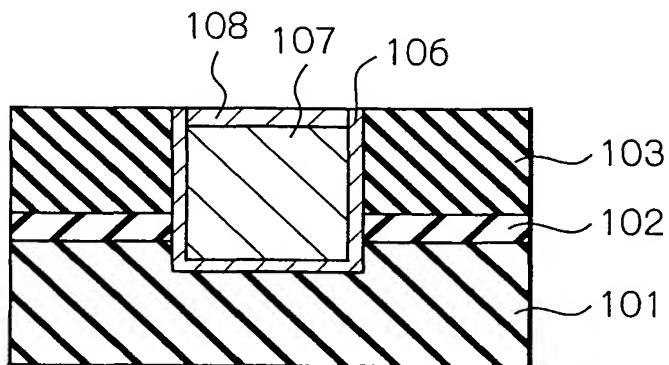
*Fig. 1E*    PRIOR ART



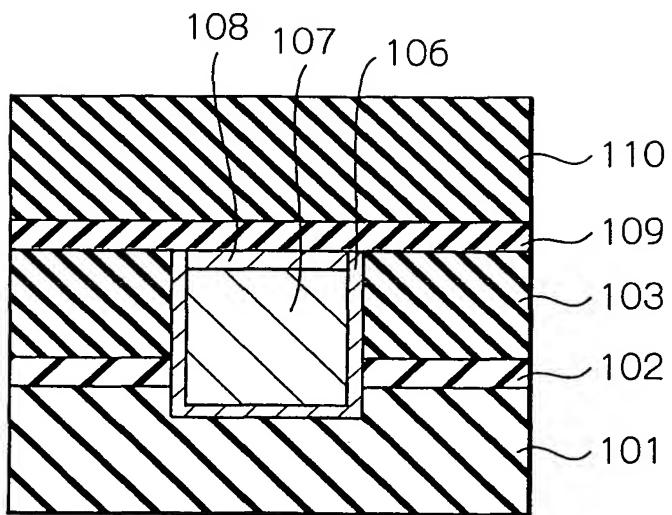
*Fig. 1F*    PRIOR ART



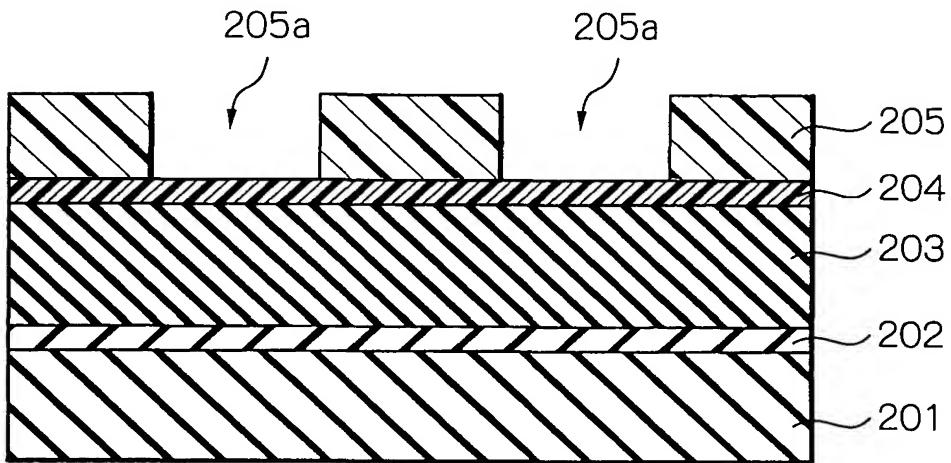
*Fig. 1G*      PRIOR ART



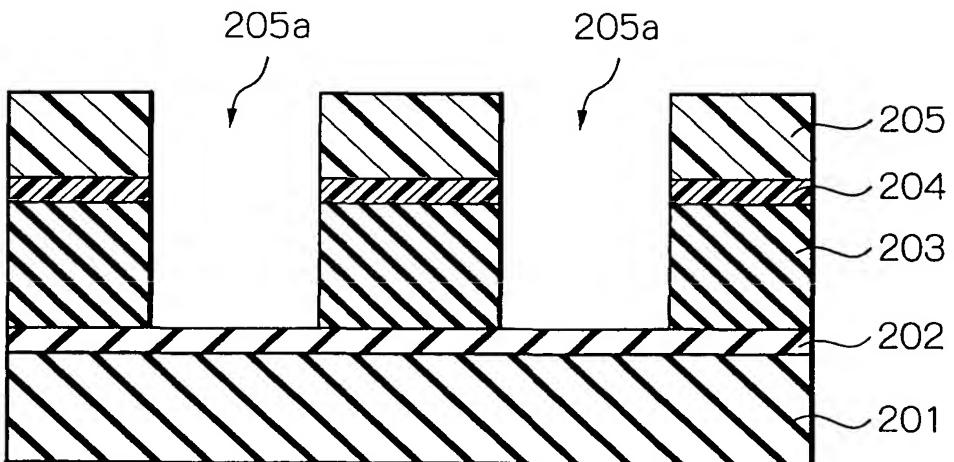
*Fig. 1H*      PRIOR ART



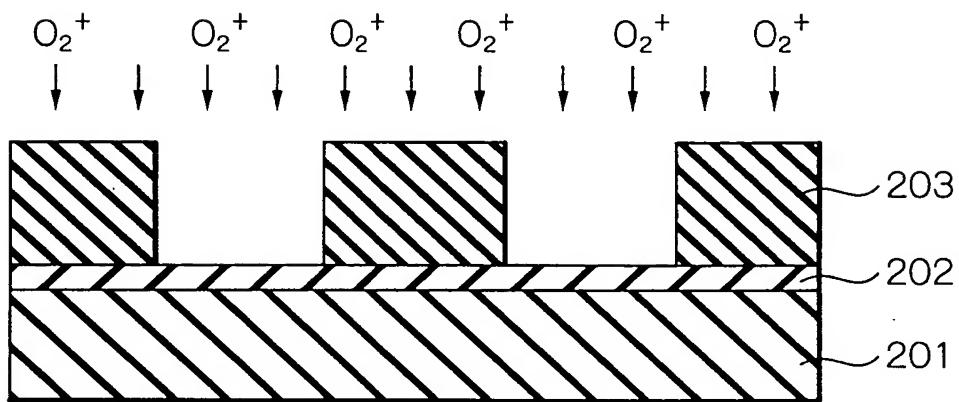
*Fig. 2A*      PRIOR ART



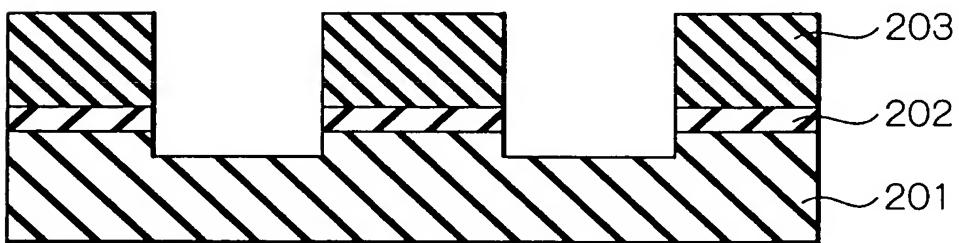
*Fig. 2B*      PRIOR ART



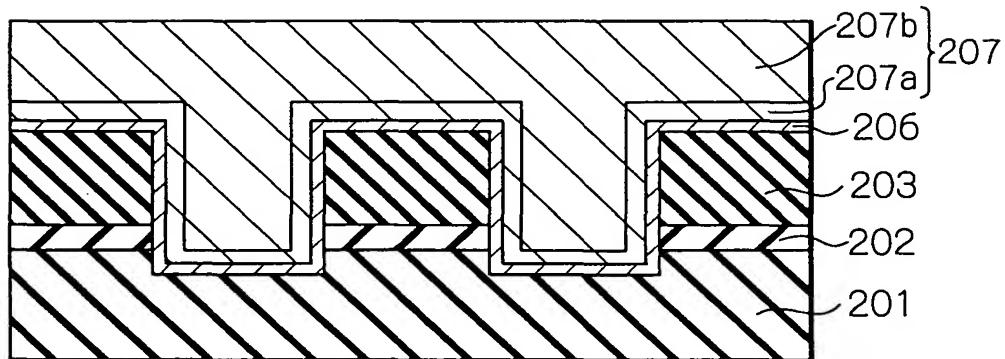
*Fig. 2C*      PRIOR ART



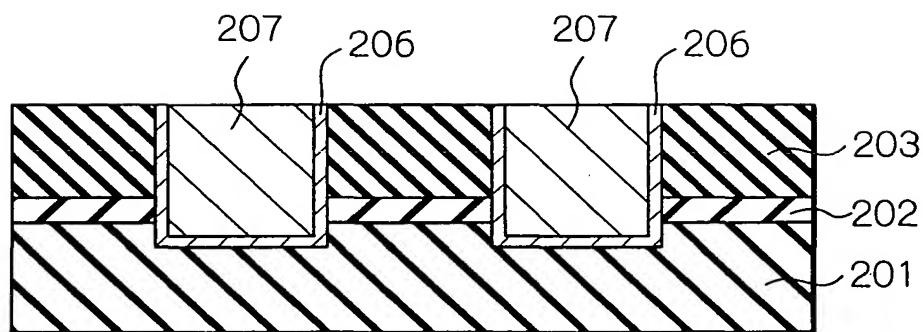
*Fig. 2D*      PRIOR ART



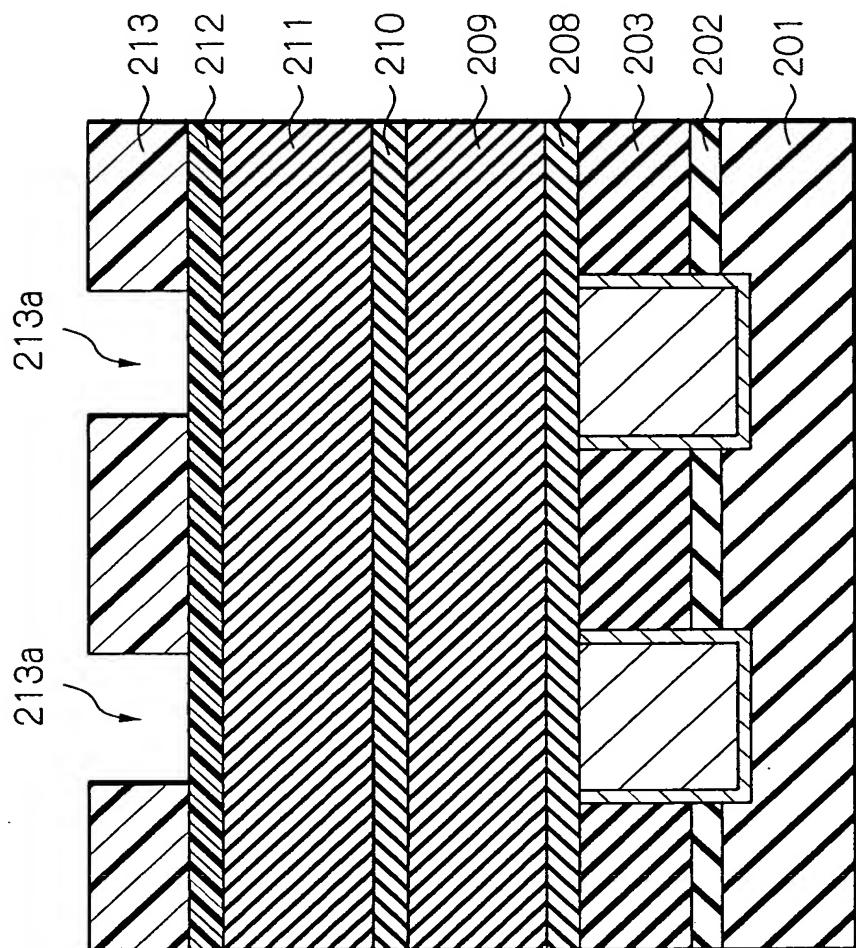
*Fig. 2E*    PRIOR ART



*Fig. 2F*    PRIOR ART



*Fig. 2G* PRIOR ART



*Fig. 2H* PRIOR ART

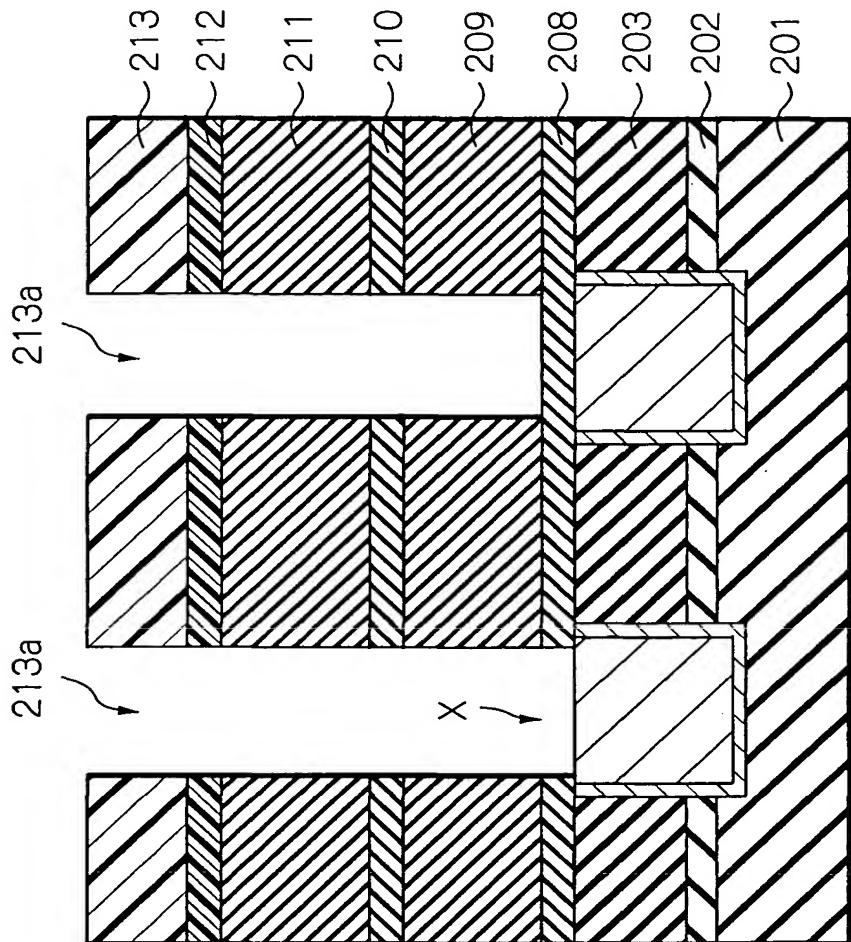
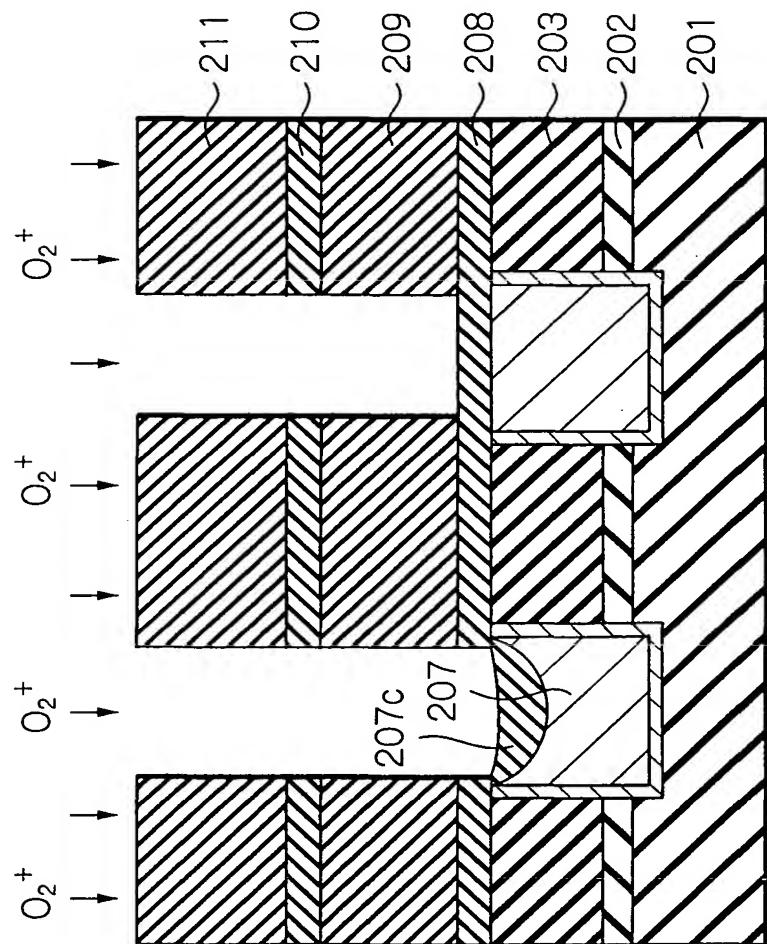
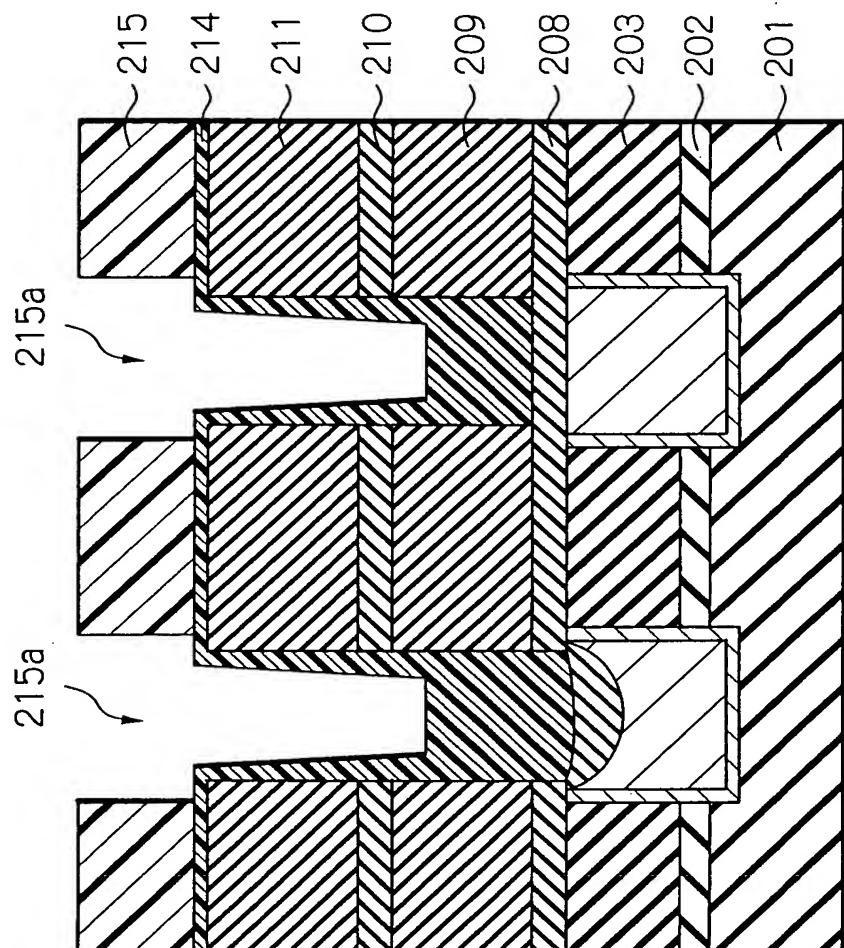


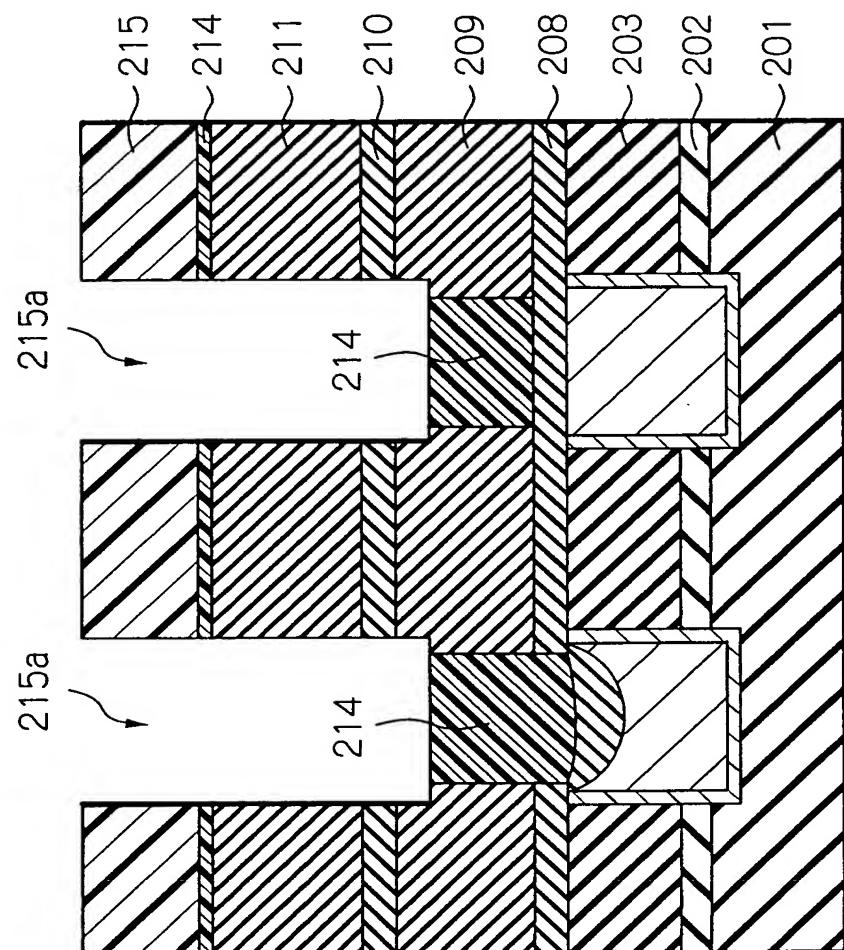
Fig. 21 PRIOR ART



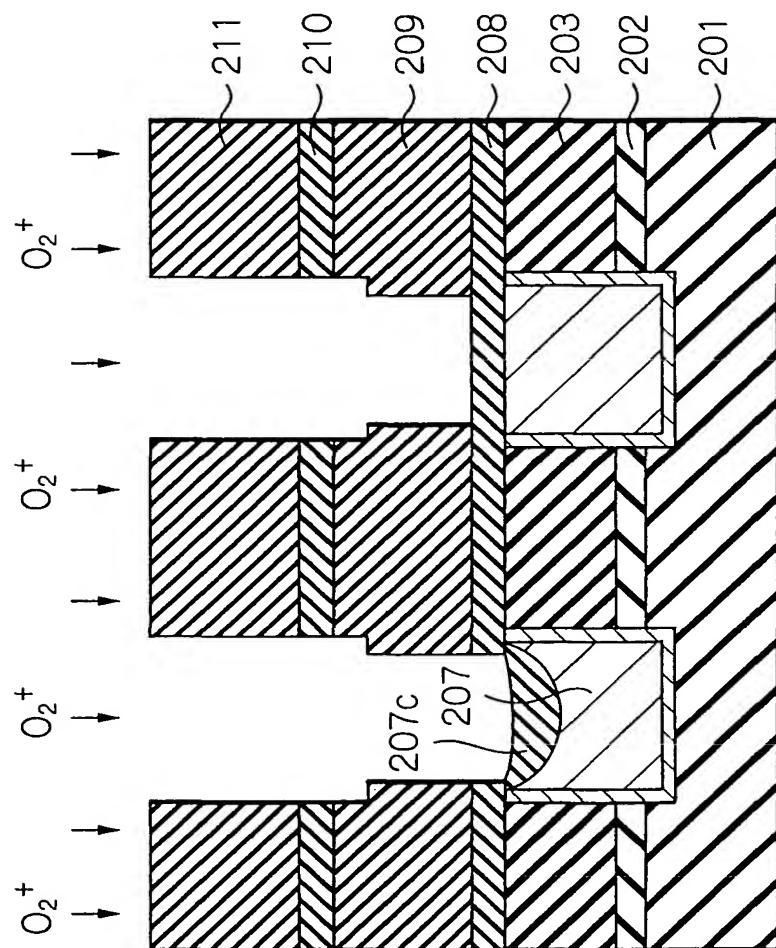
*Fig. 2J* PRIOR ART



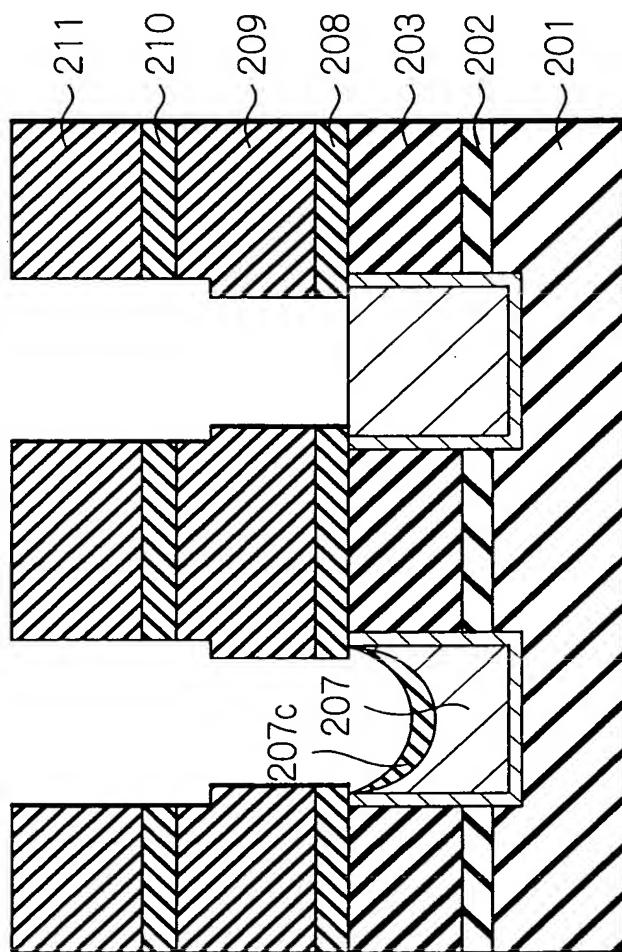
*Fig. 2K* PRIOR ART



*Fig. 2L*      PRIOR ART

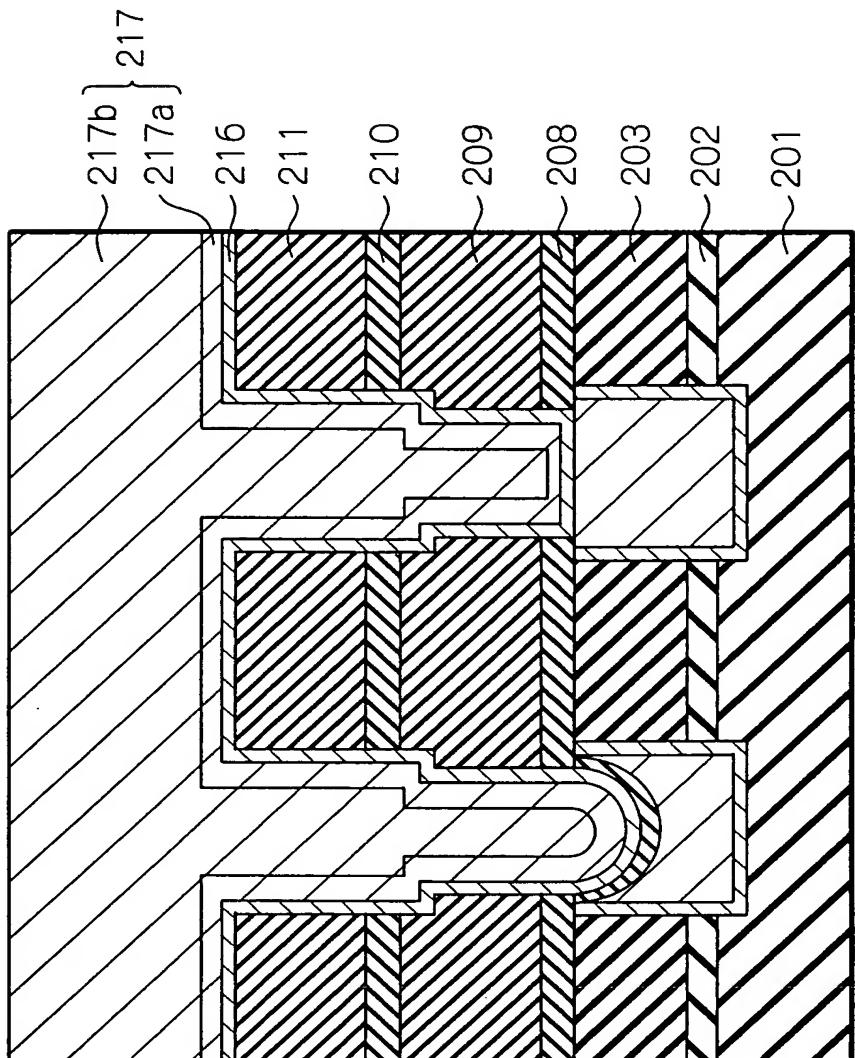


*Fig. 2M* PRIOR ART



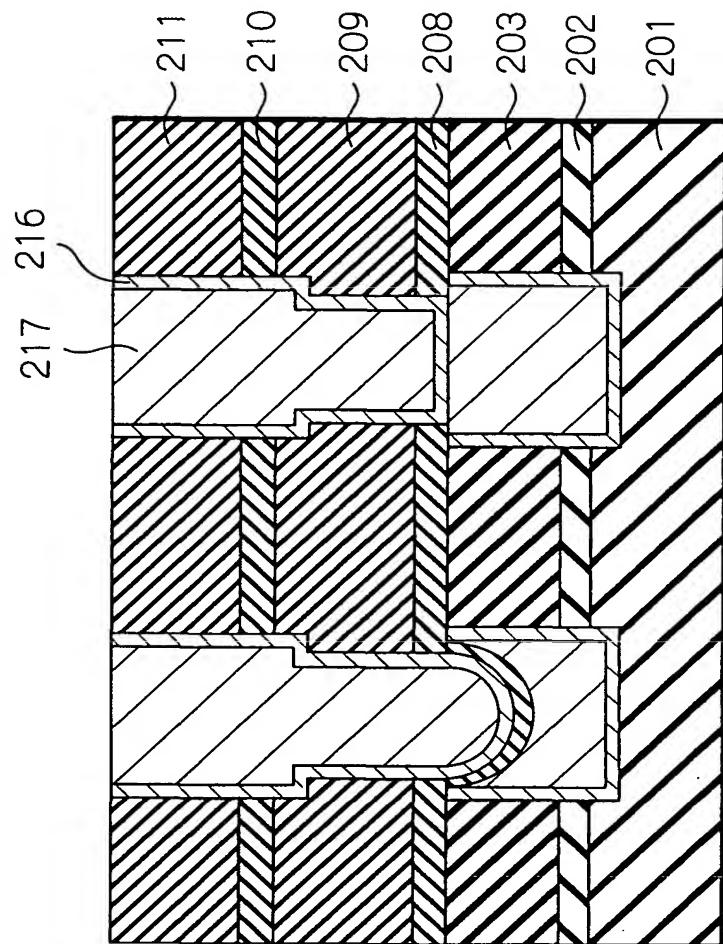
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87

*Fig. 2N* PRIOR ART



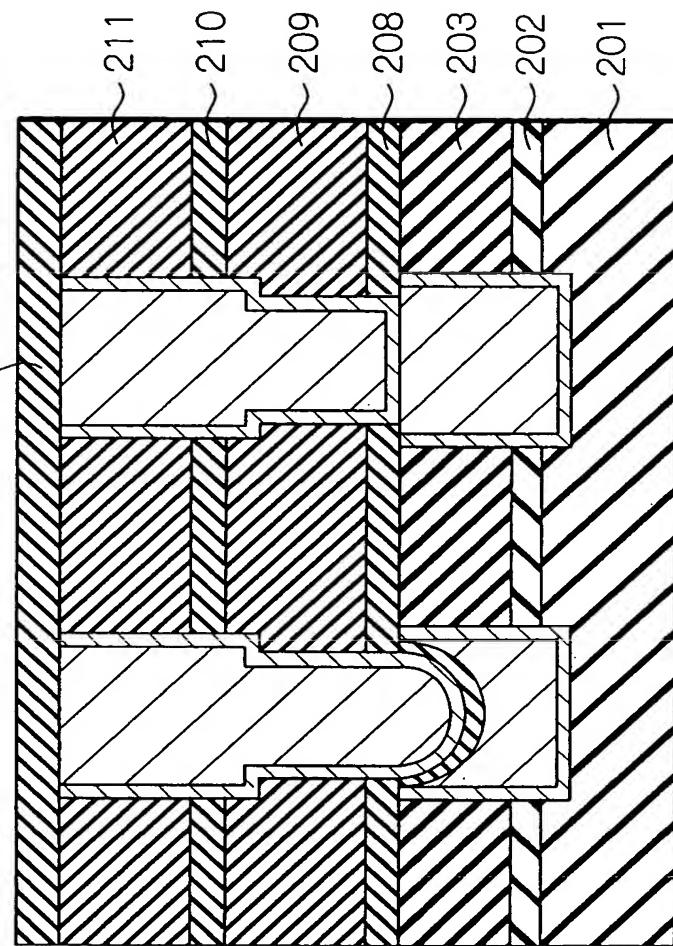
16  
87

*Fig. 20*    PRIOR ART



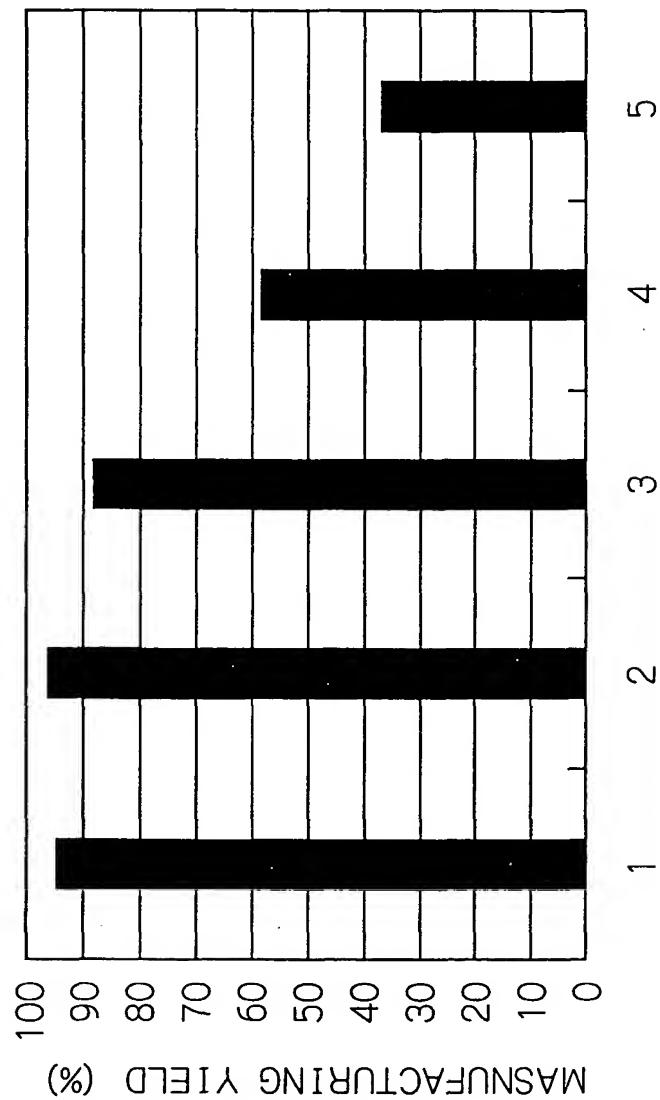
17/  
87

*Fig. 2P* PRIOR ART



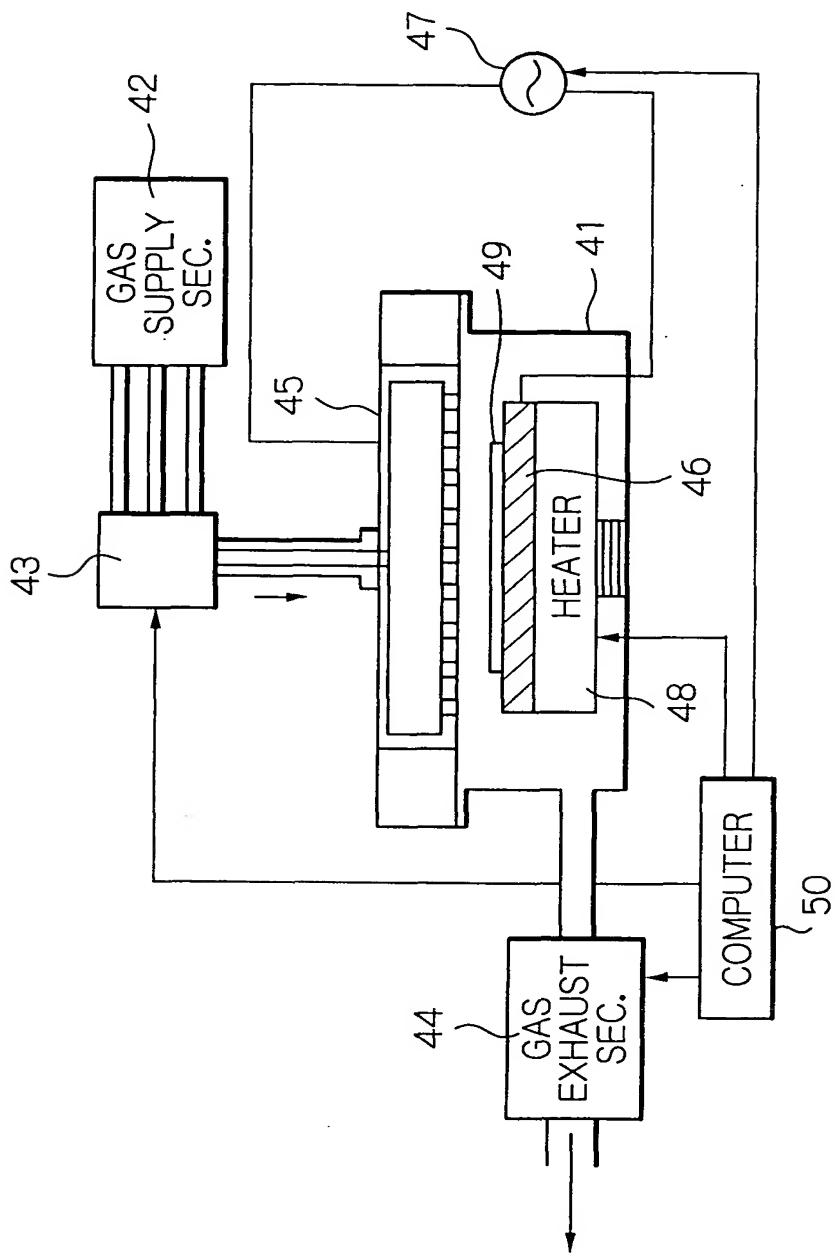
18  
87

*Fig. 3* PRIOR ART

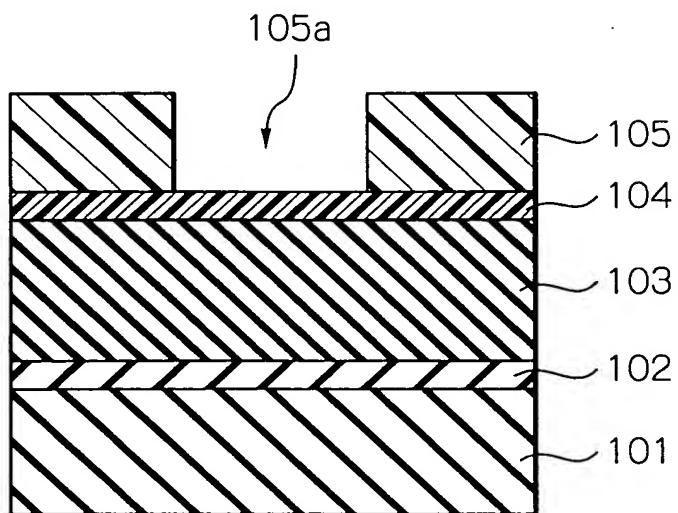


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87

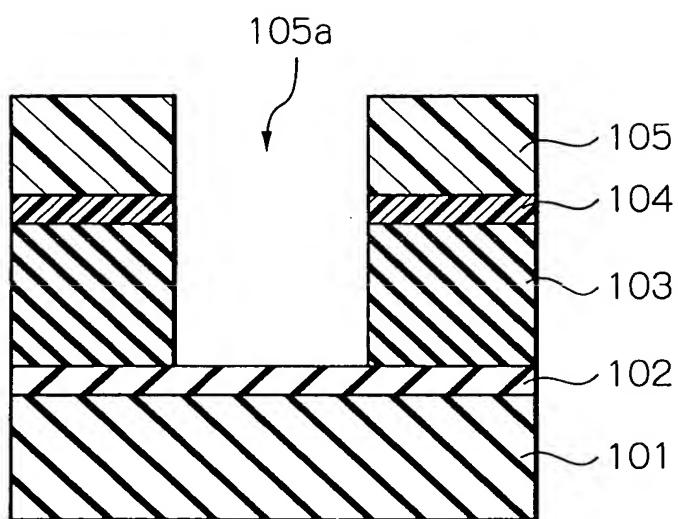
*Fig. 4* PRIOR ART



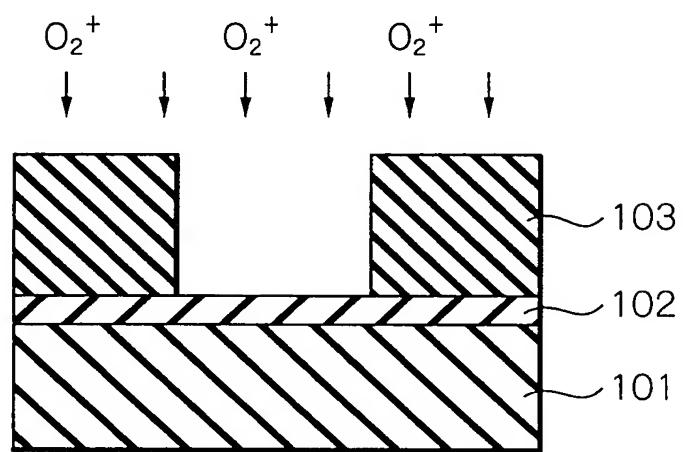
*Fig. 5A*



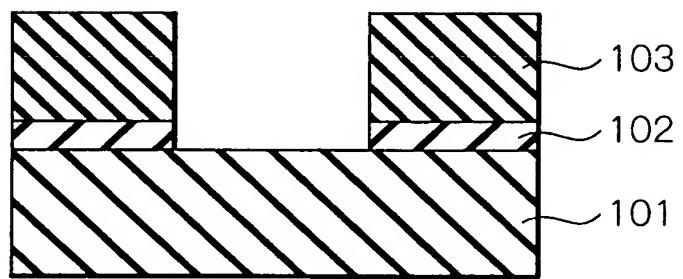
*Fig. 5B*



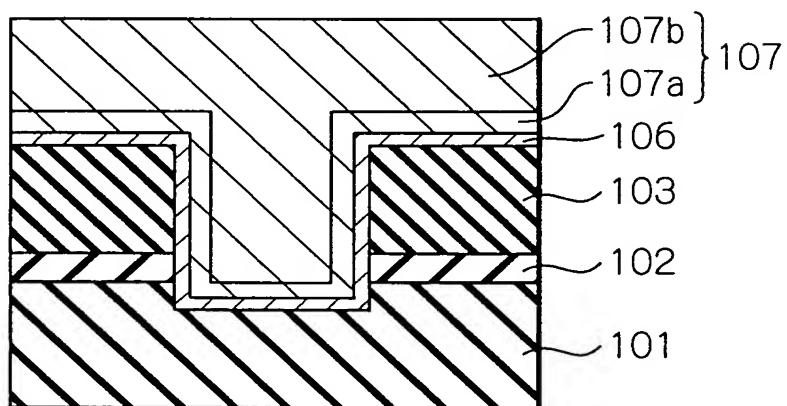
*Fig. 5C*



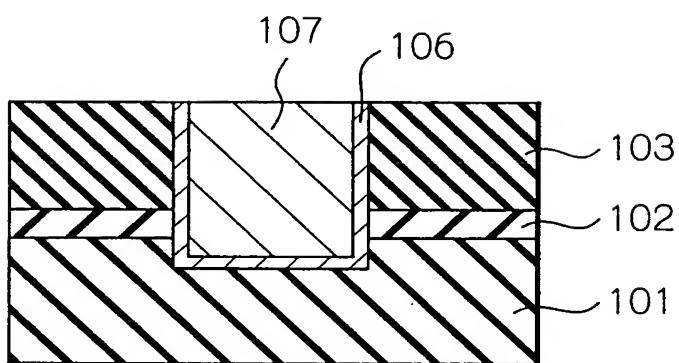
*Fig. 5D*



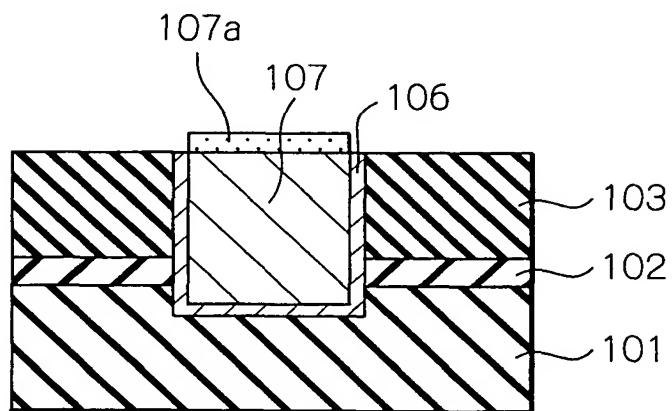
*Fig. 5E*



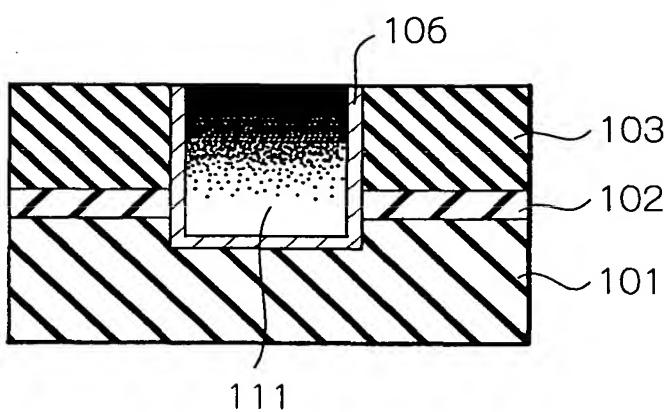
*Fig. 5F*



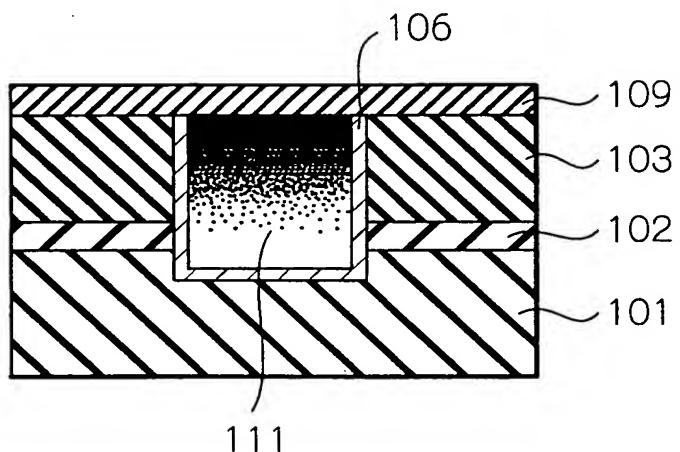
*Fig. 5G*



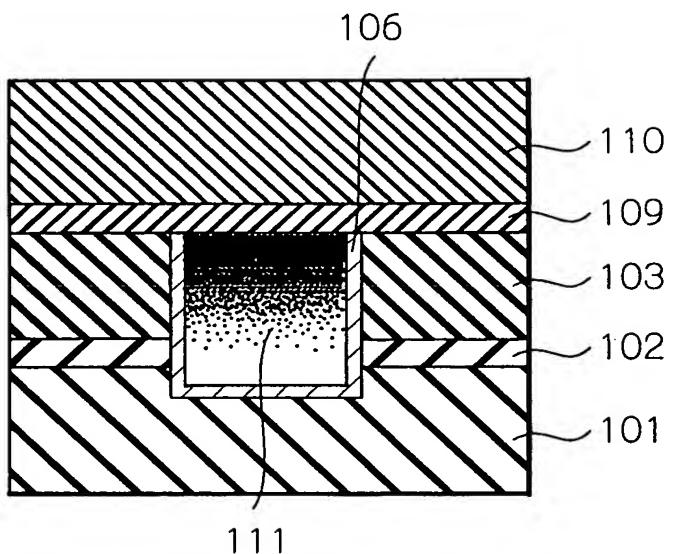
*Fig. 5H*



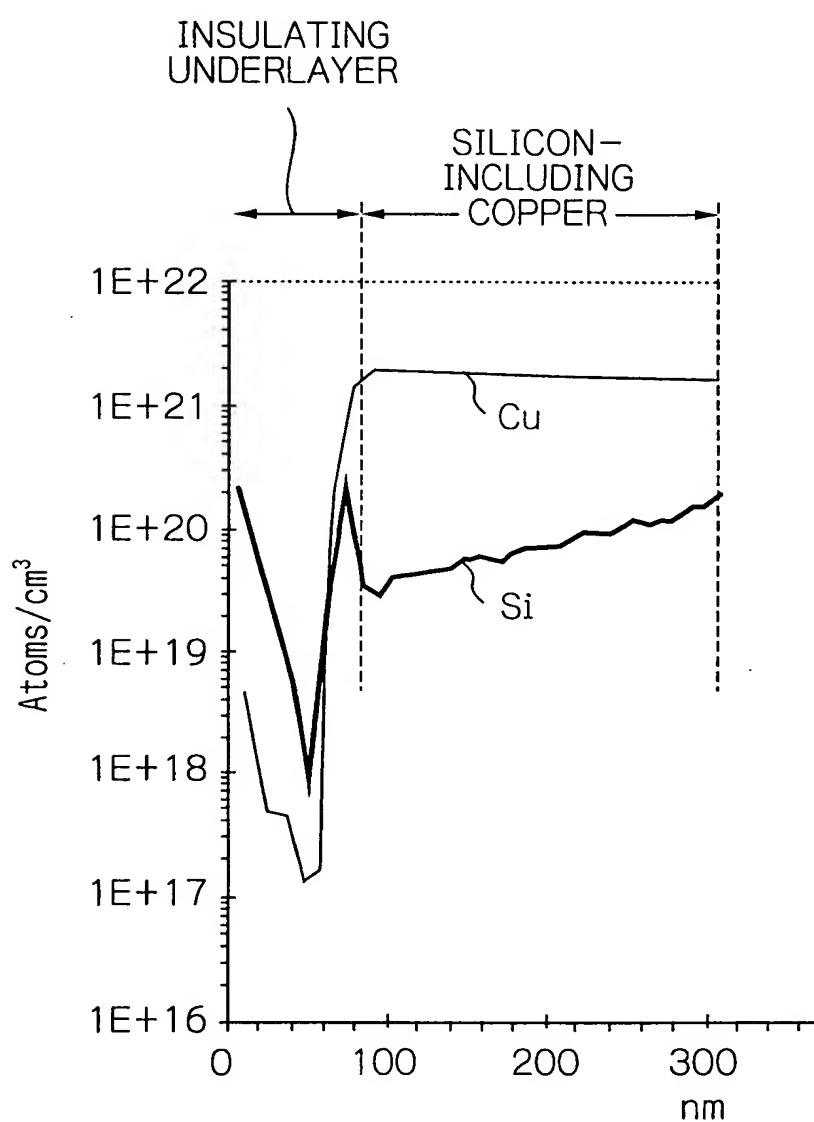
*Fig. 5I*



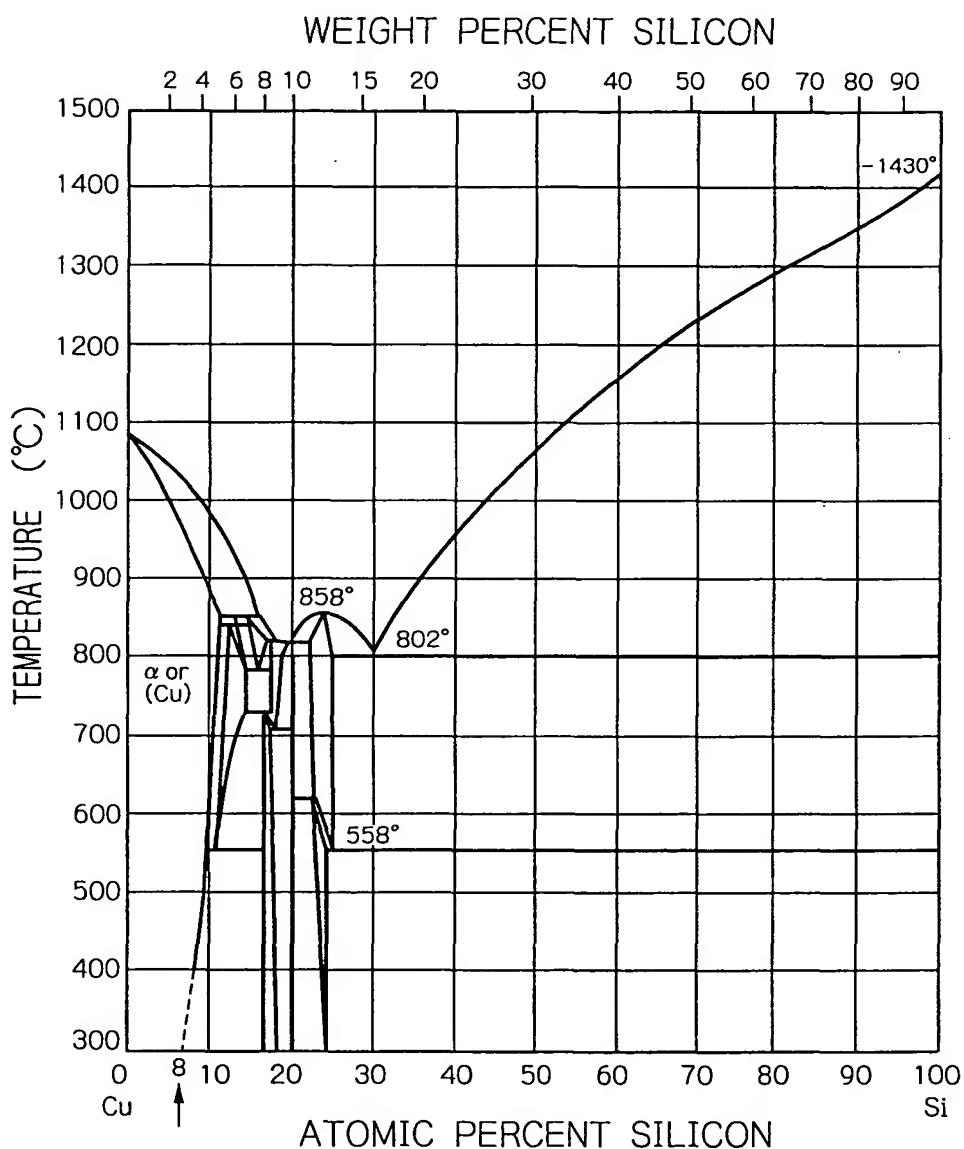
*Fig. 5J*



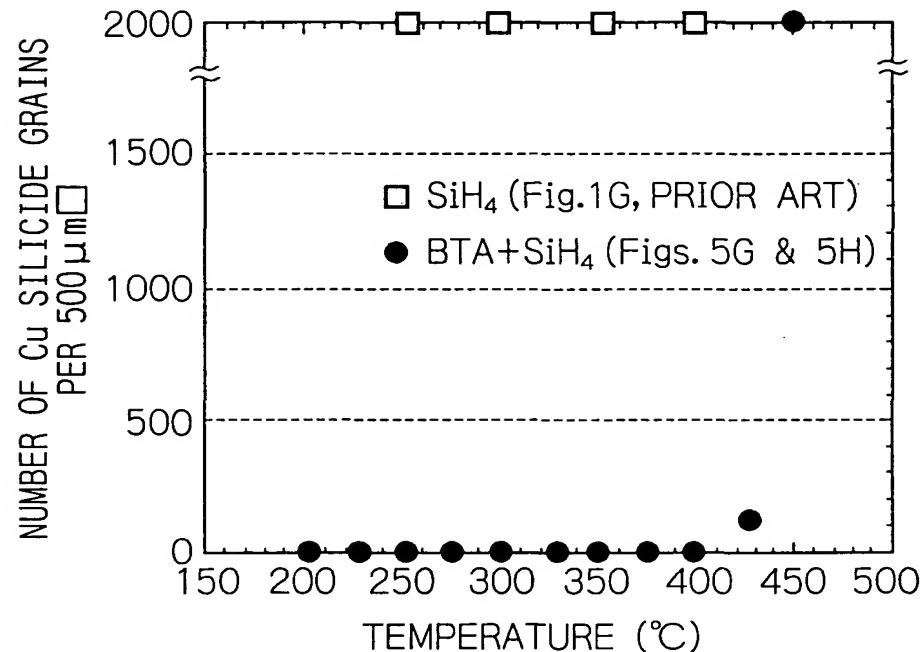
*Fig. 6*



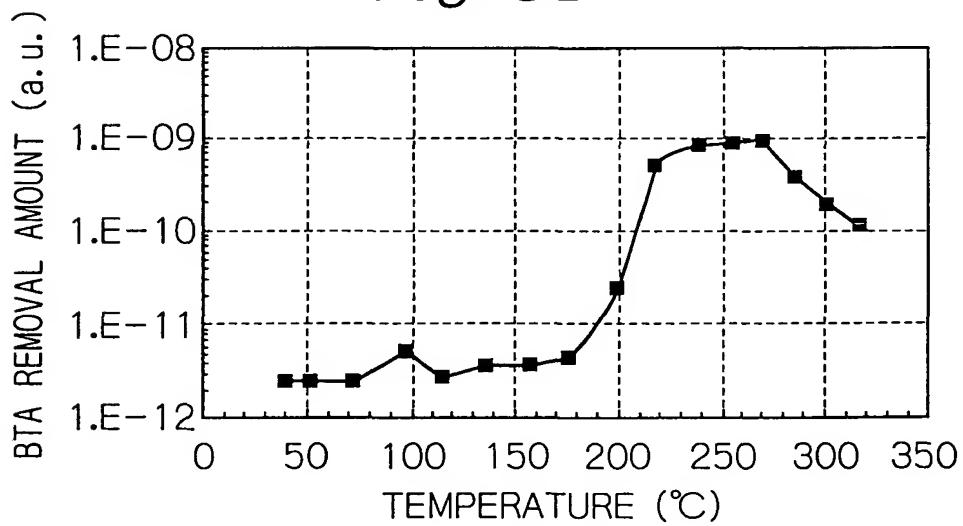
*Fig. 7*



*Fig. 8A*



*Fig. 8B*



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Fig. 8C

TEMPERATURE (°C)	200	225	250	300	350	400
LAYER 111	ABSENCE OF Si	ABSENCE OF Si	PRESENCE OF Si	PRESENCE OF Si	PRESENCE OF Si	PRESENCE OF Si

*Fig. 9A*

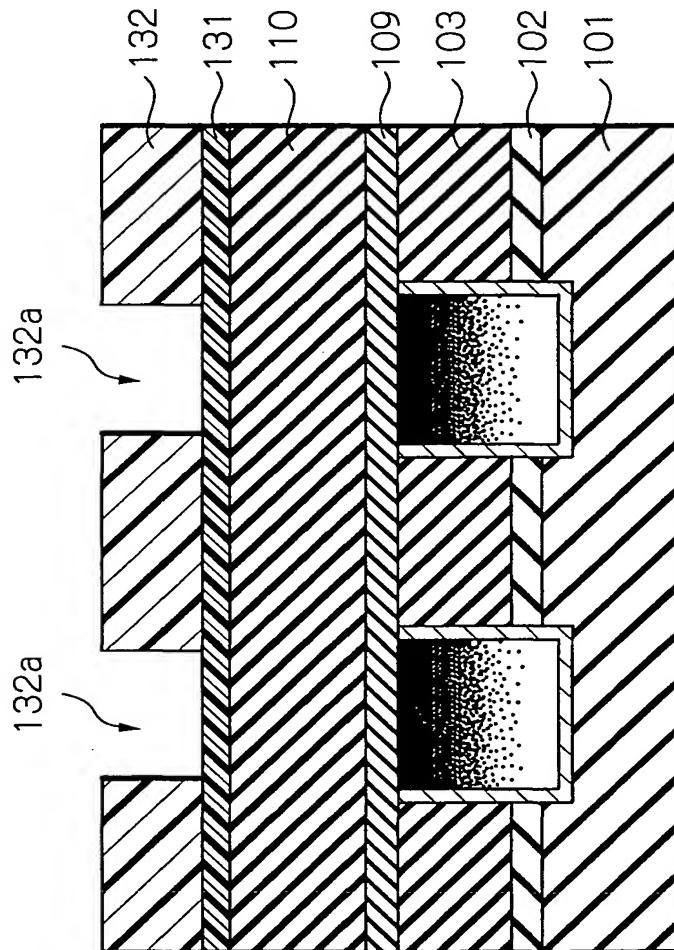


Fig. 9B

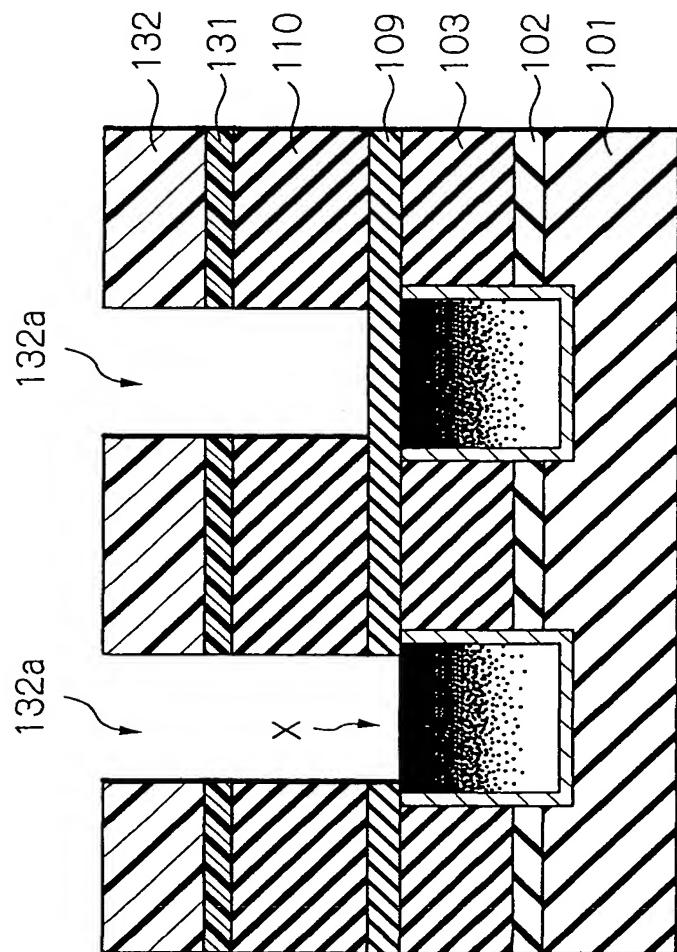


Fig. 9C

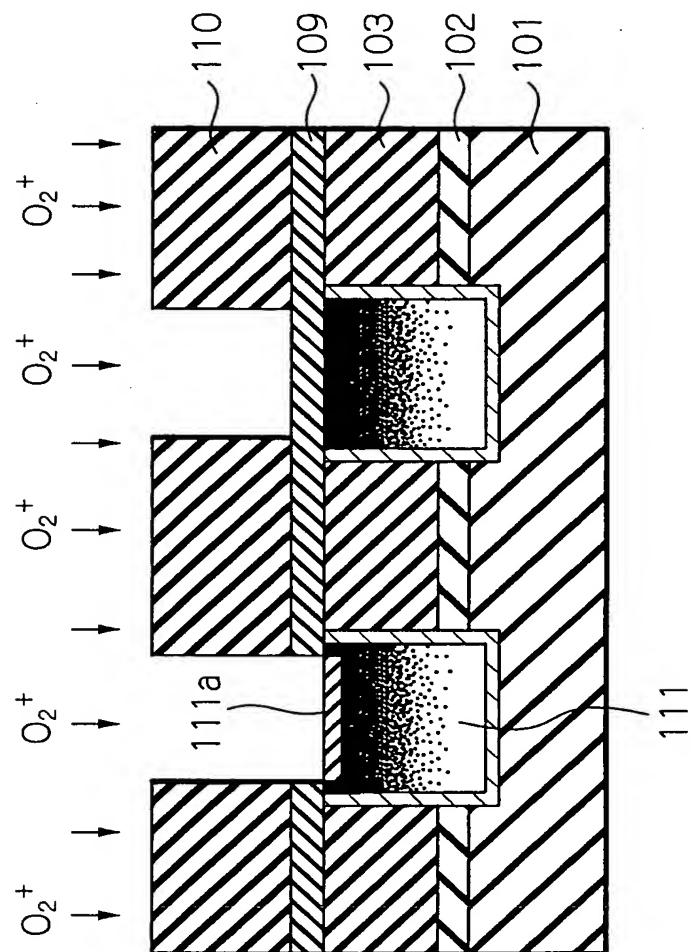


Fig. 9D

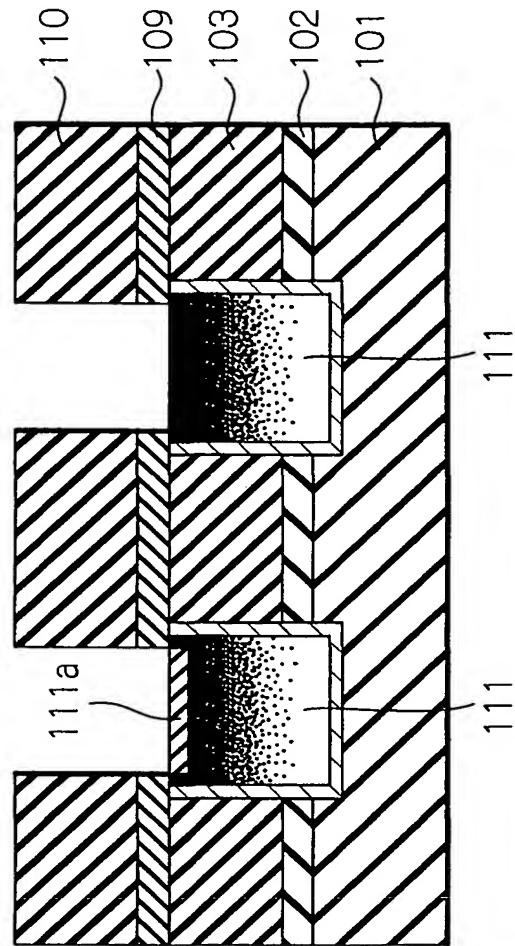
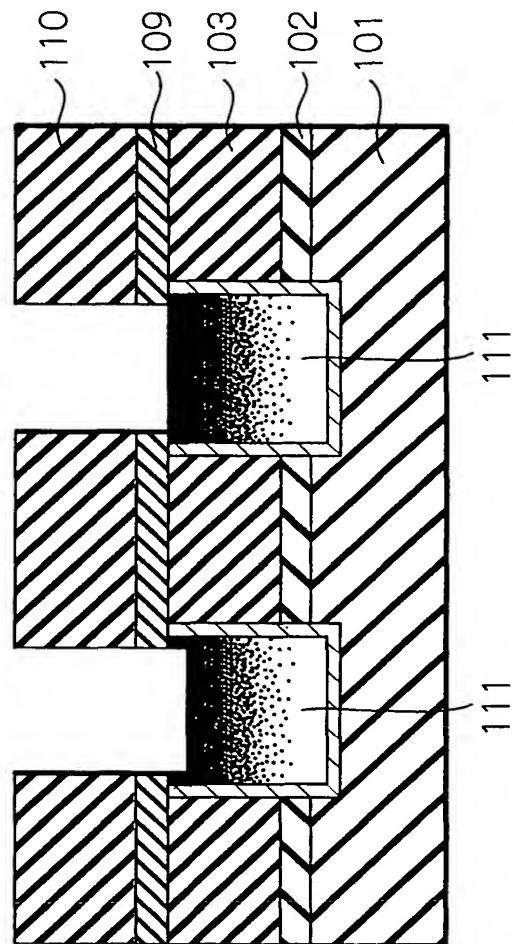
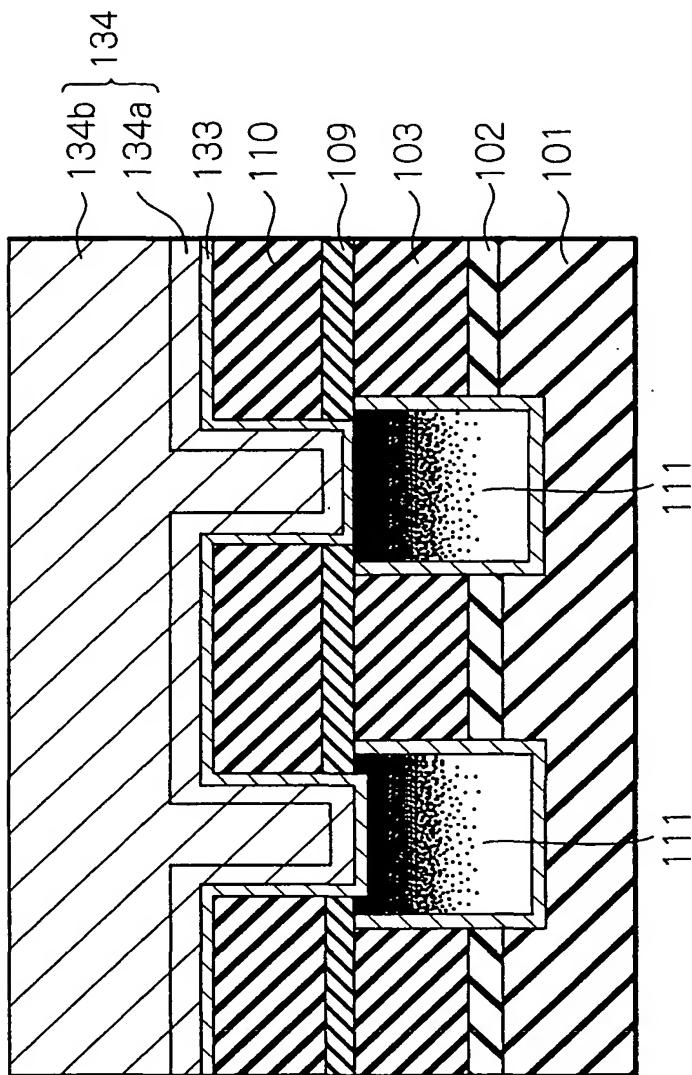


Fig. 9E



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Fig. 9F



*Fig. 9G*

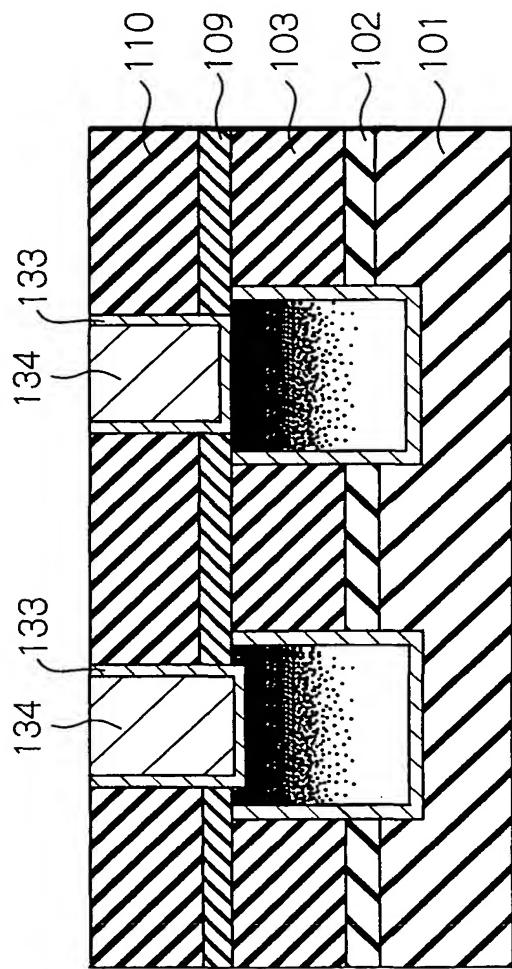
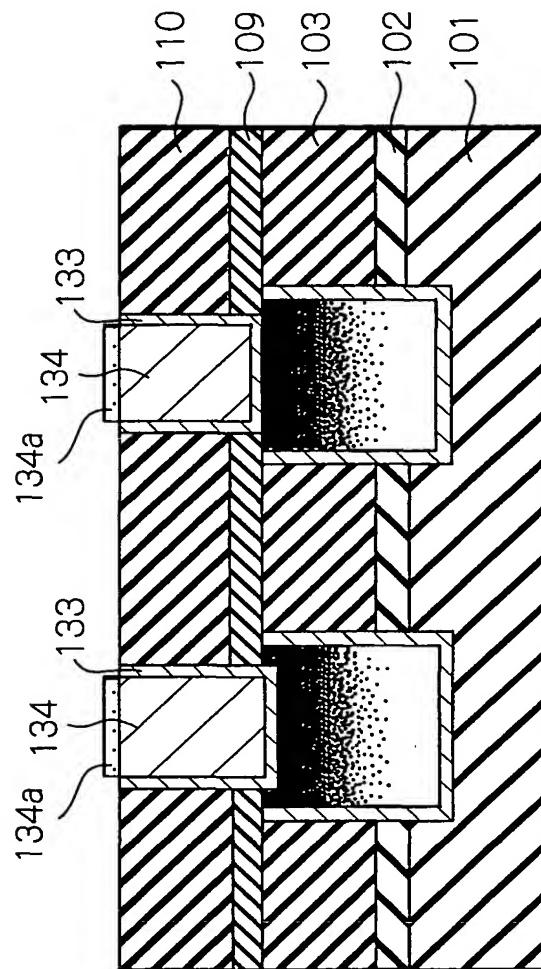
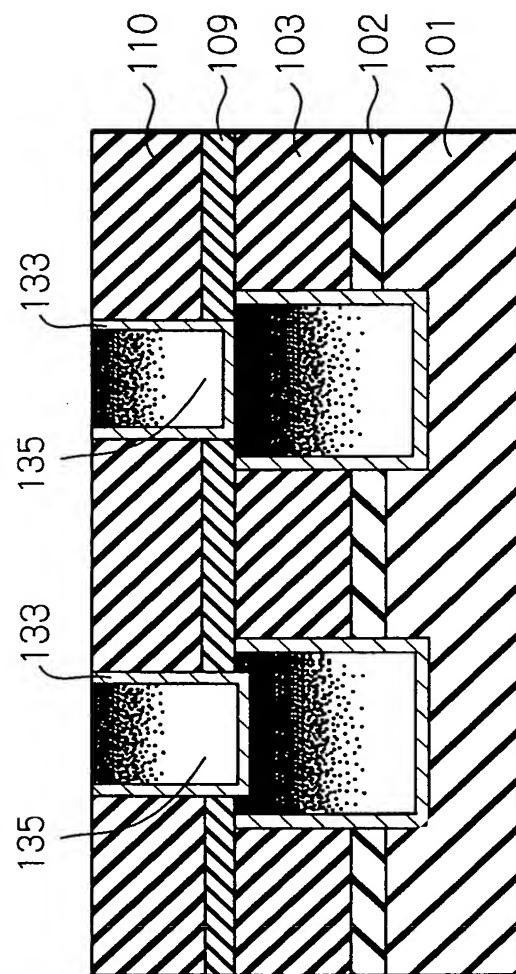


Fig. 9H

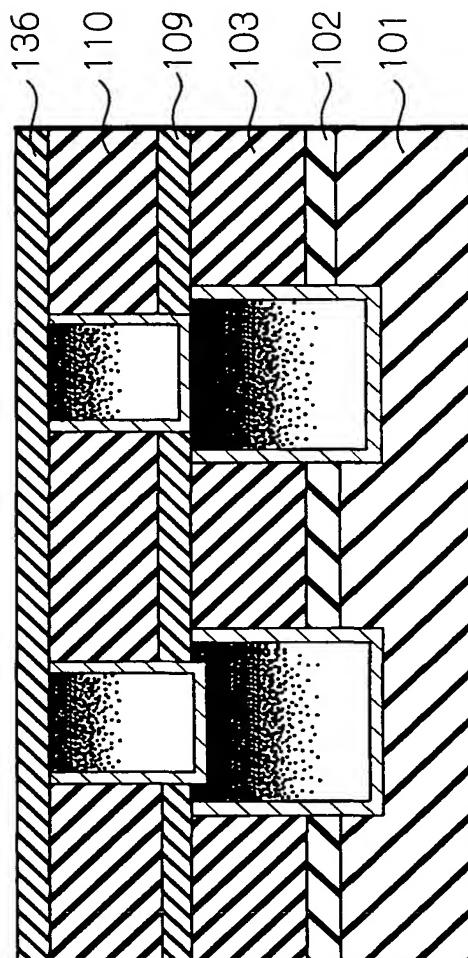


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87

*Fig. 9I*



*Fig. 9J*



*Fig. 9K*

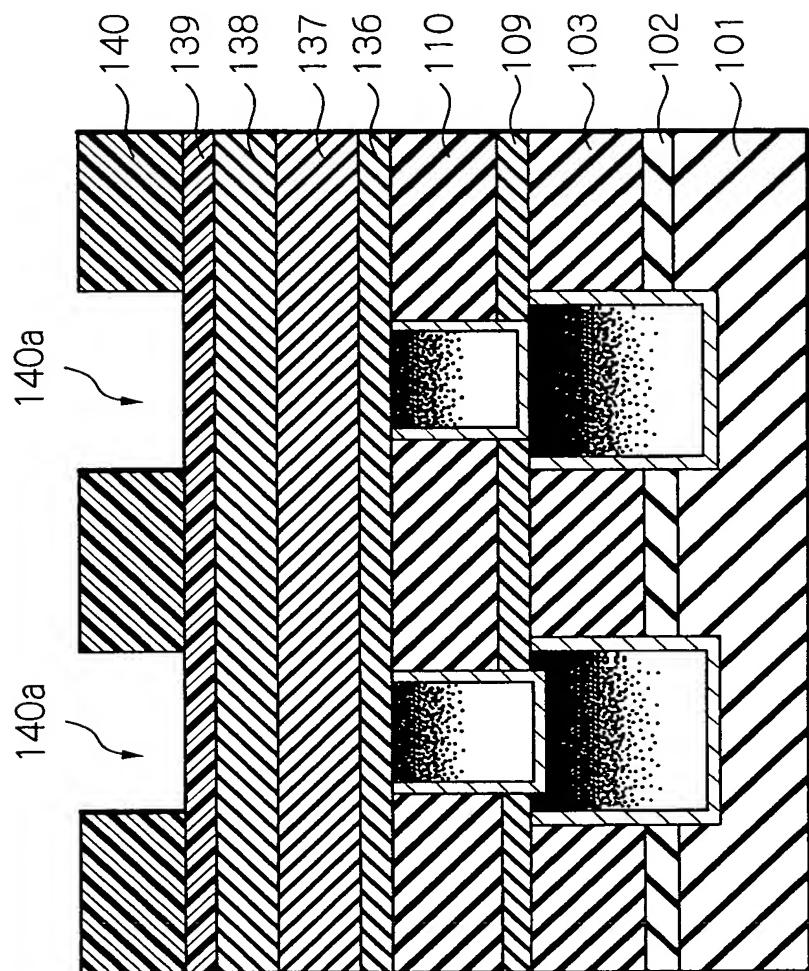


Fig. 9L

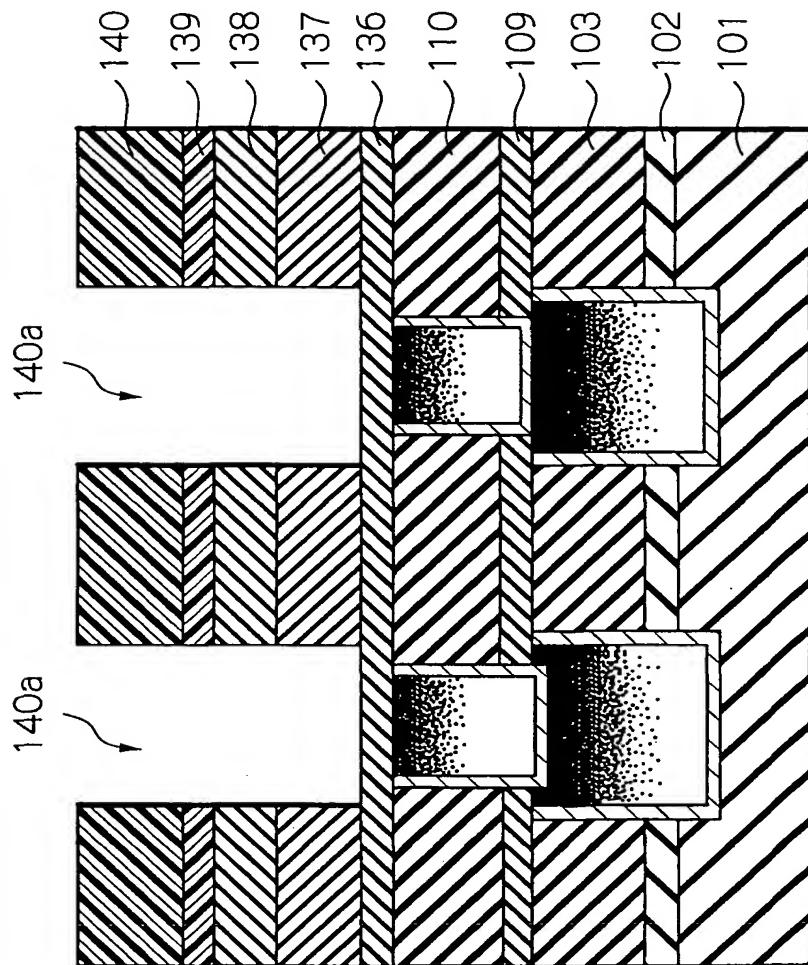
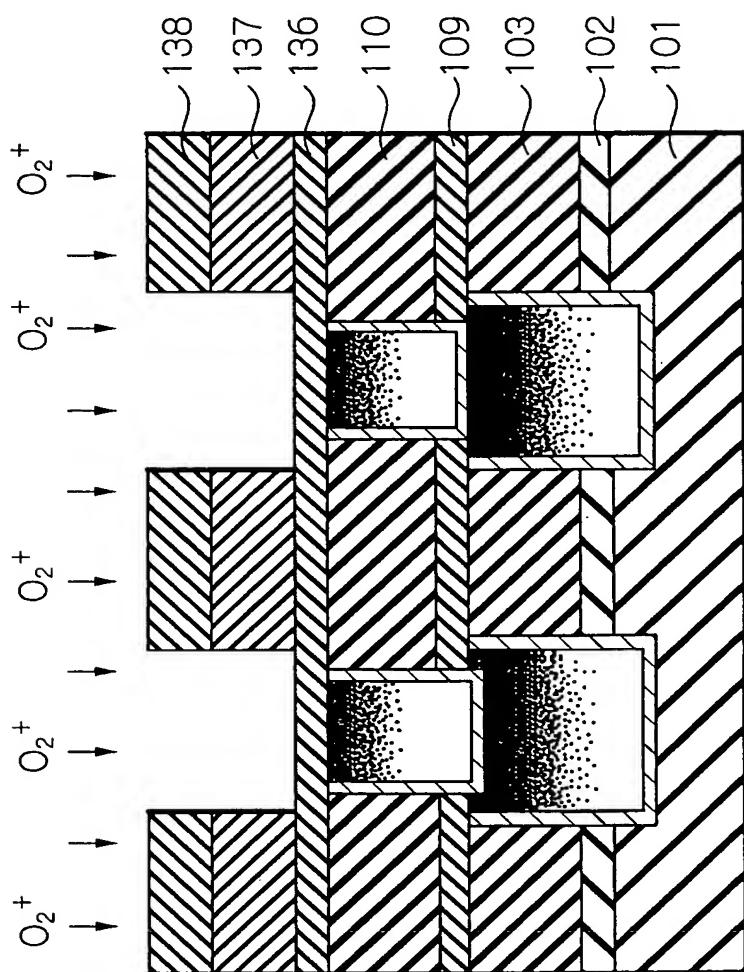
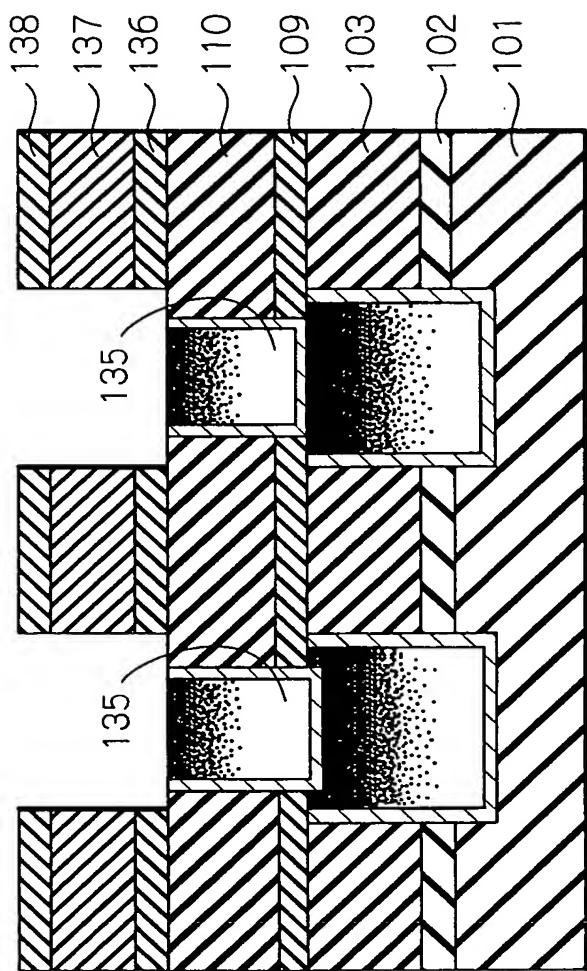


Fig. 9M



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Fig. 9N



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Fig. 90

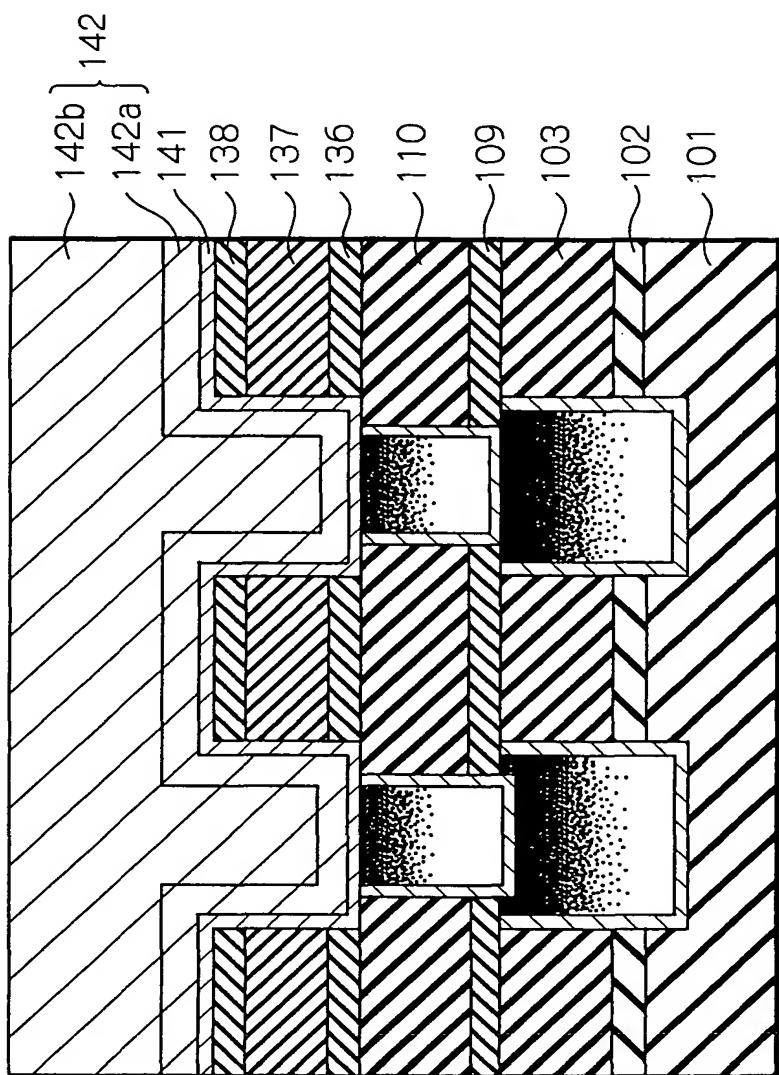


Fig. 9P

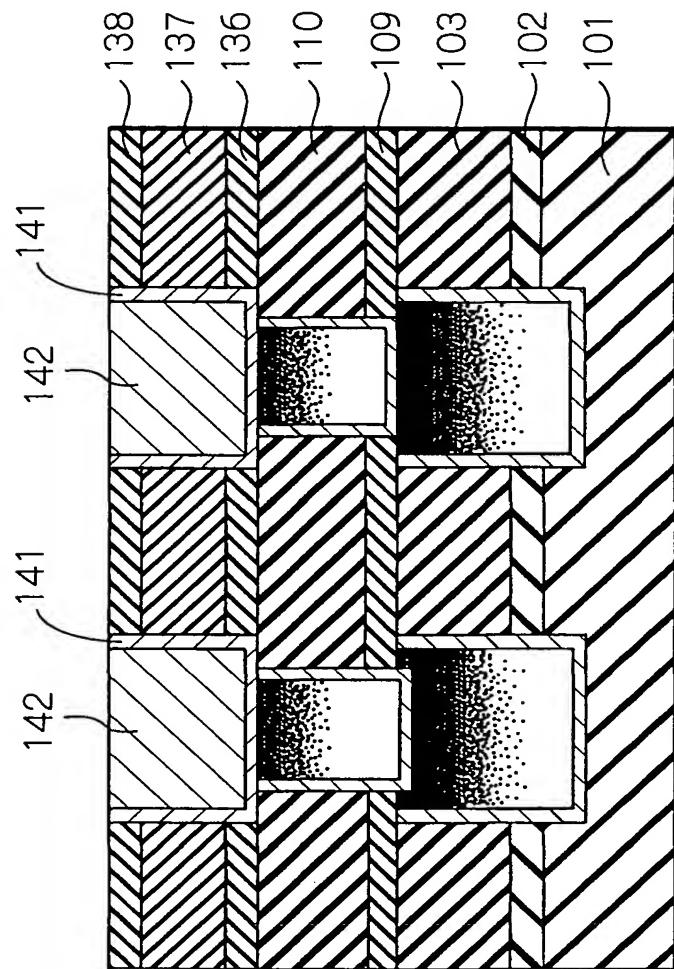
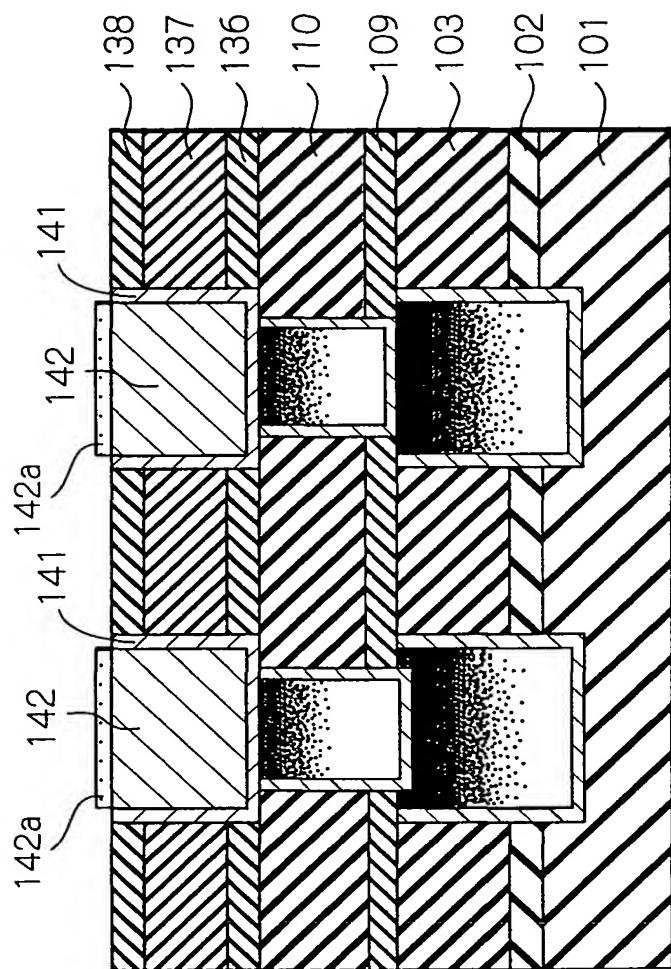


Fig. 9Q



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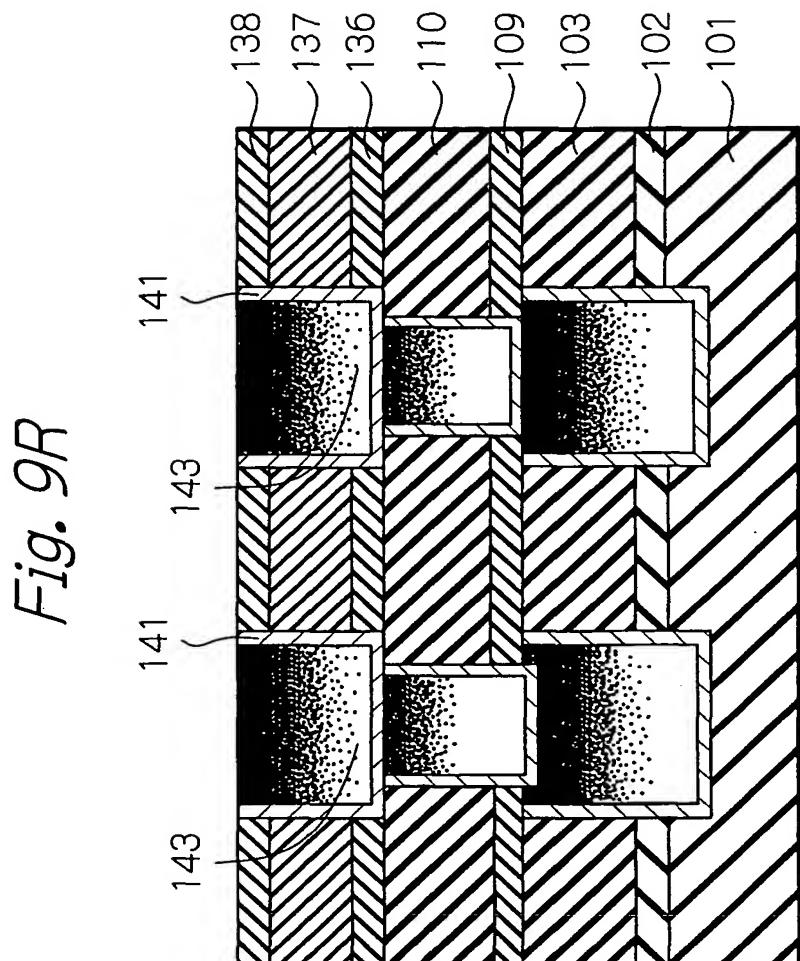
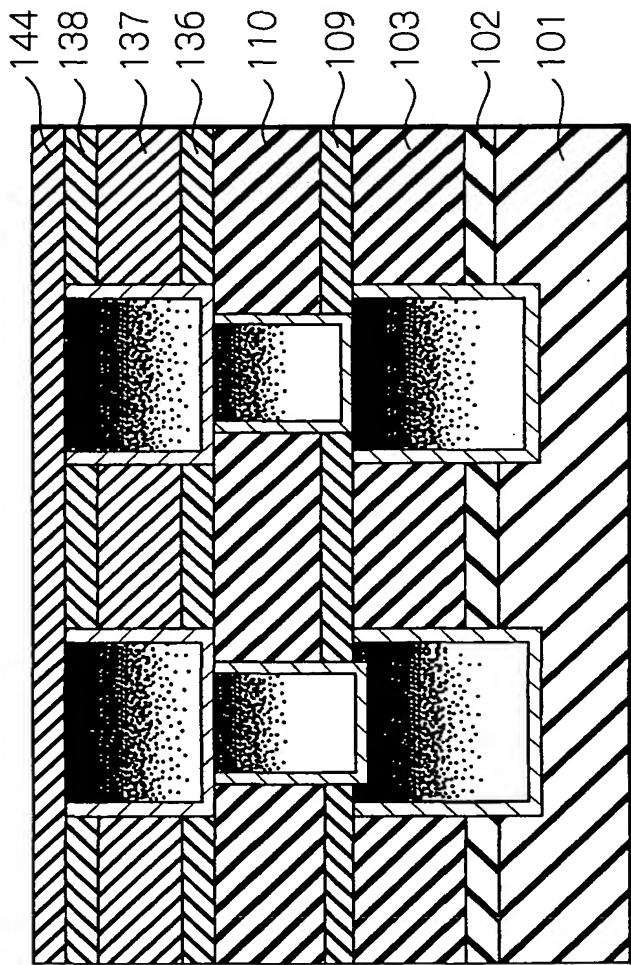
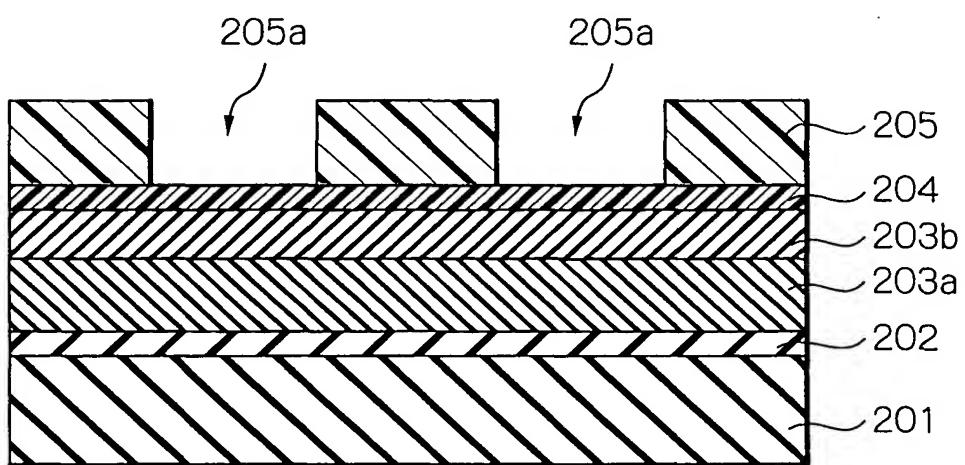


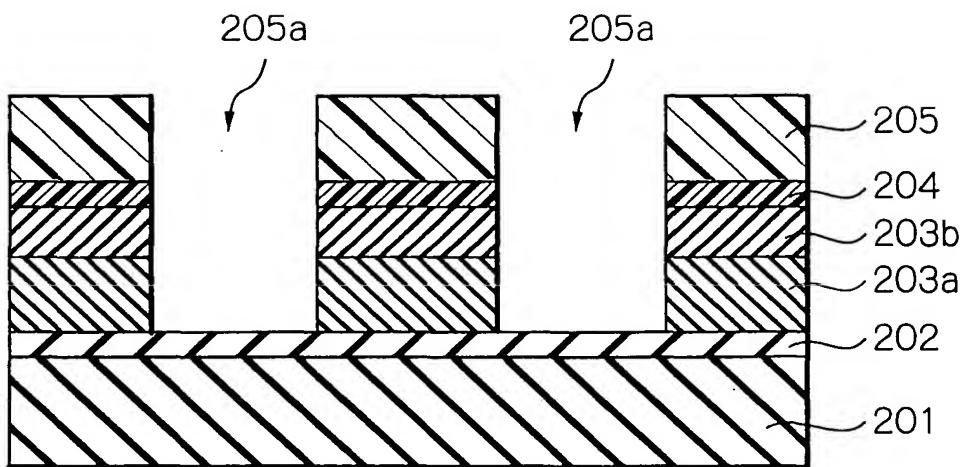
Fig. 9S



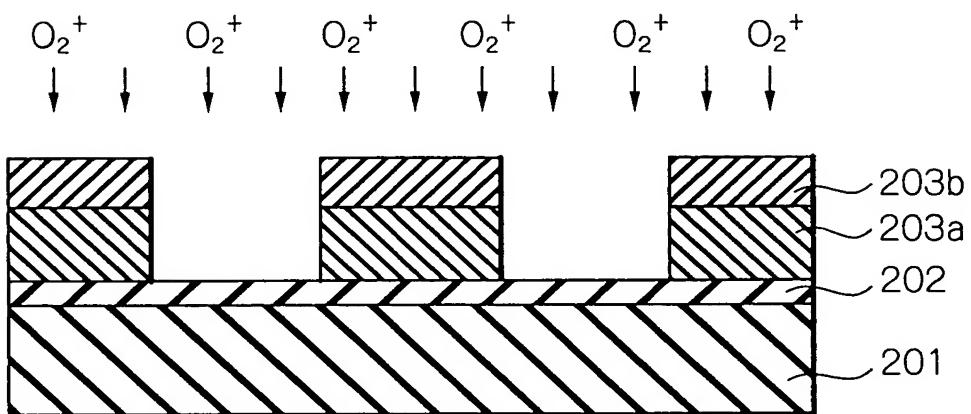
*Fig. 10A*



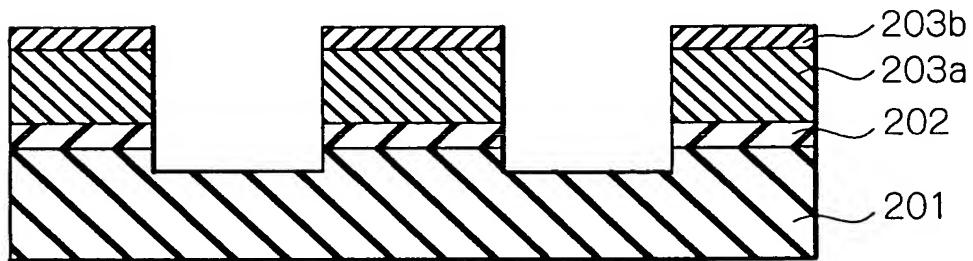
*Fig. 10B*



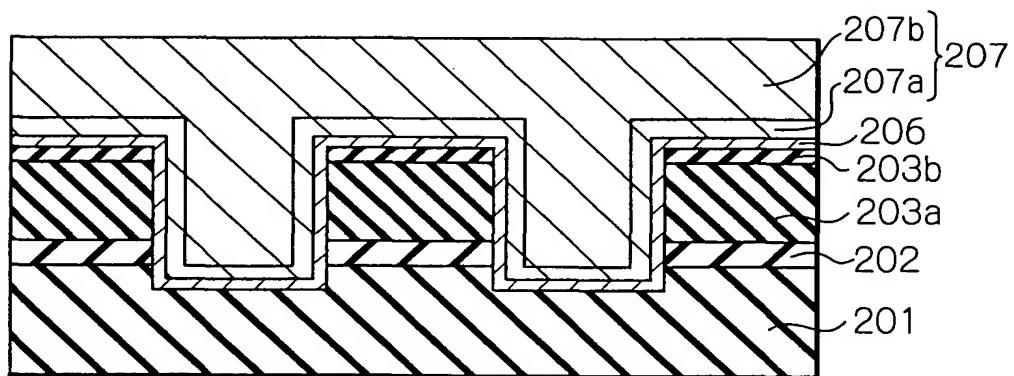
*Fig. 10C*



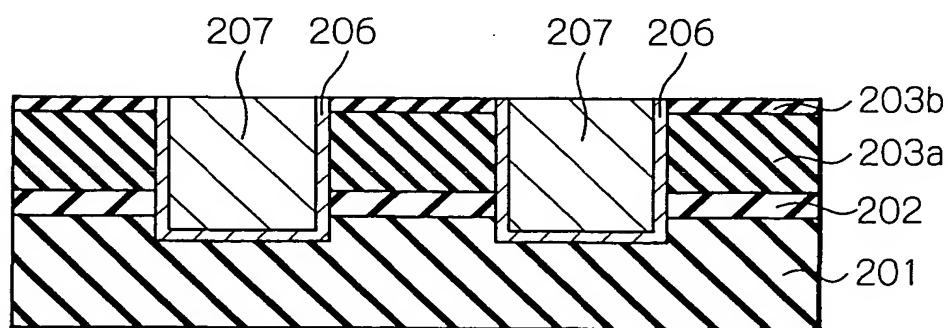
*Fig. 10D*



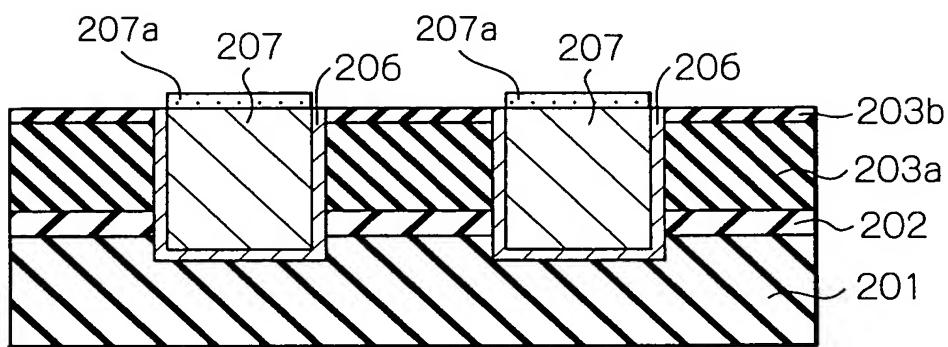
*Fig. 10E*



*Fig. 10F*



*Fig. 10G*



*Fig. 10H*

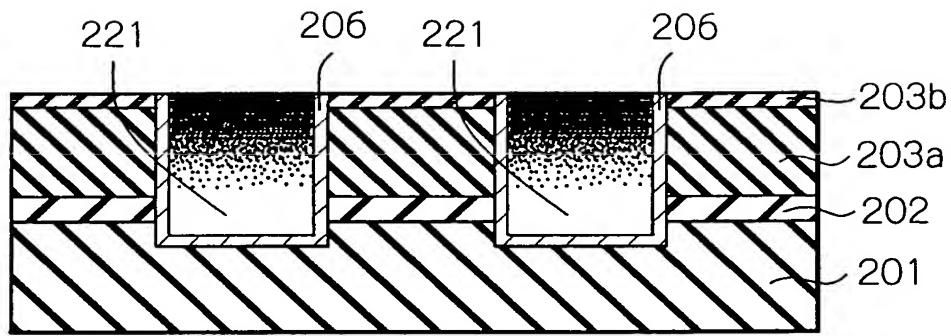


Fig. 10I

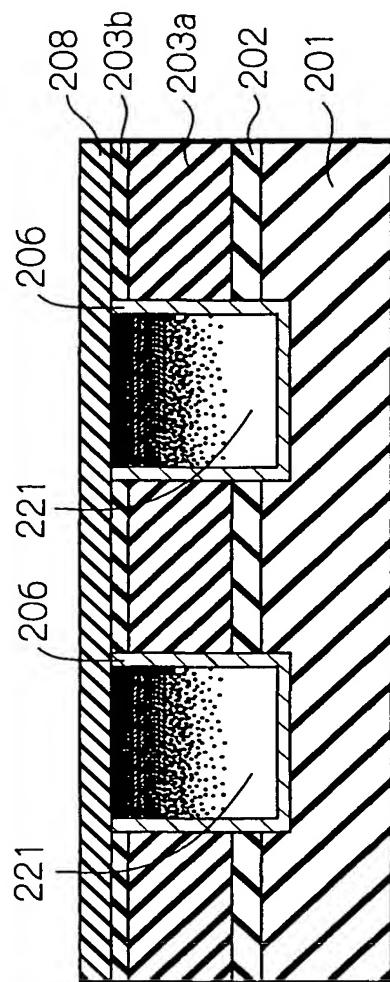
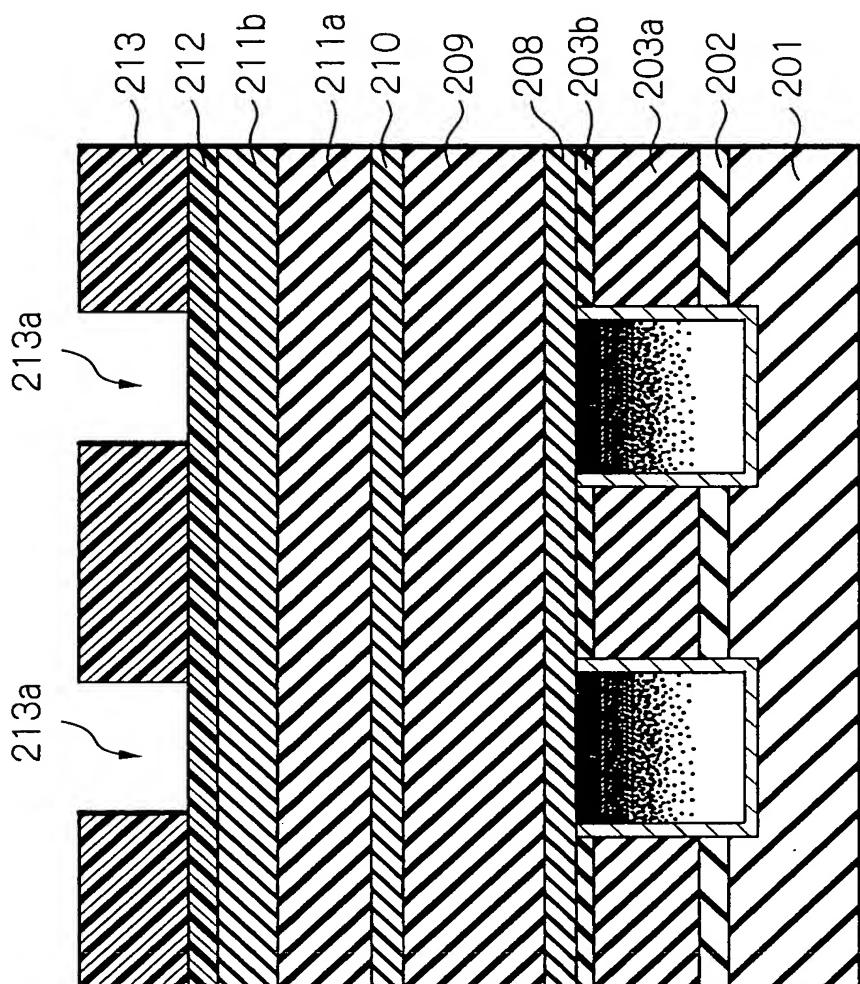
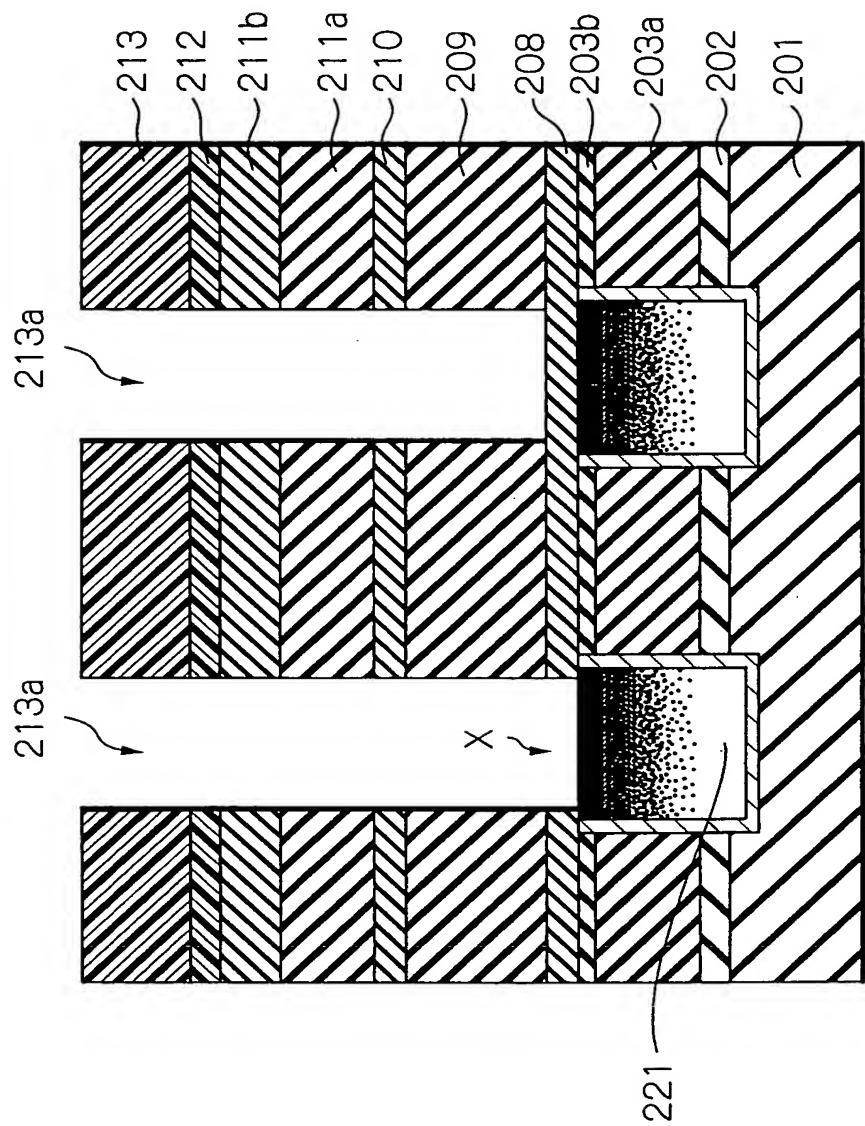


Fig. 10J

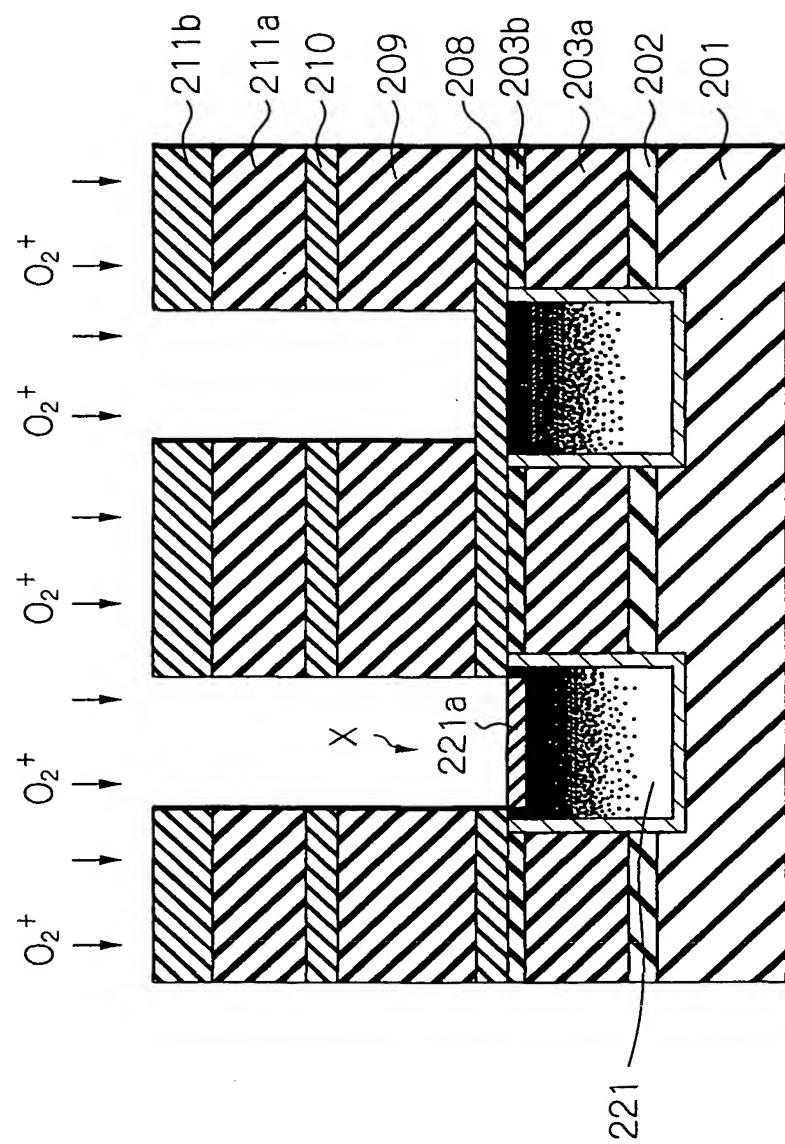


*Fig. 10K*

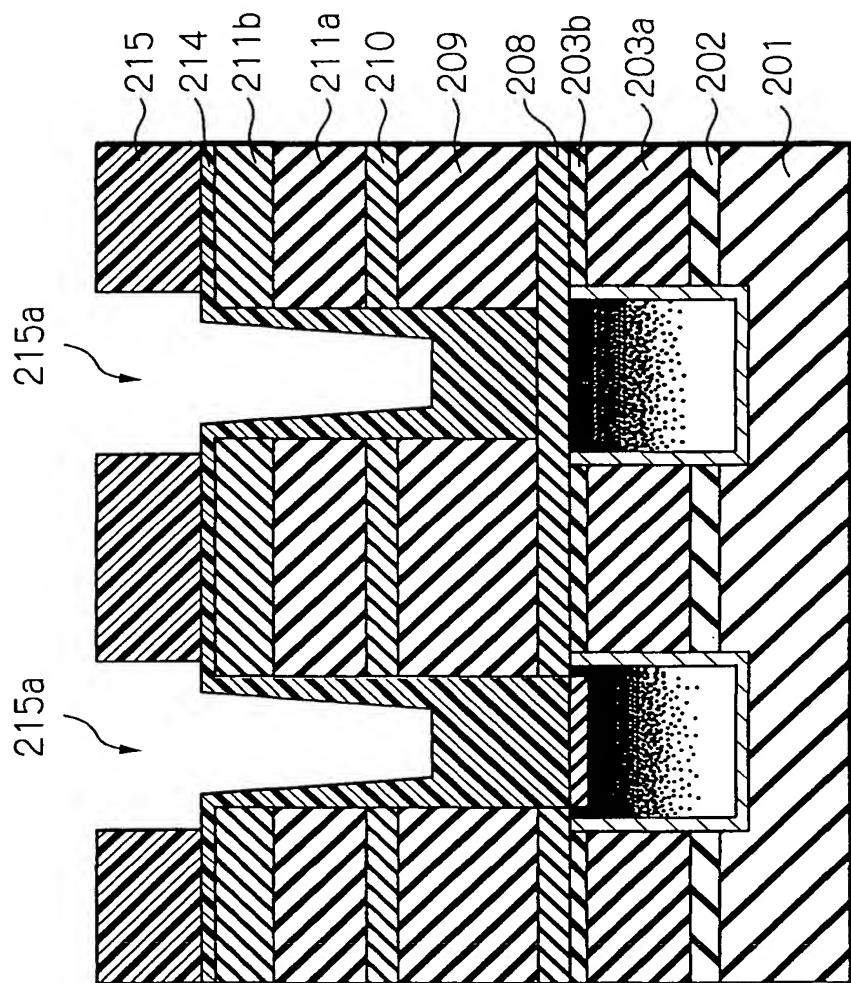


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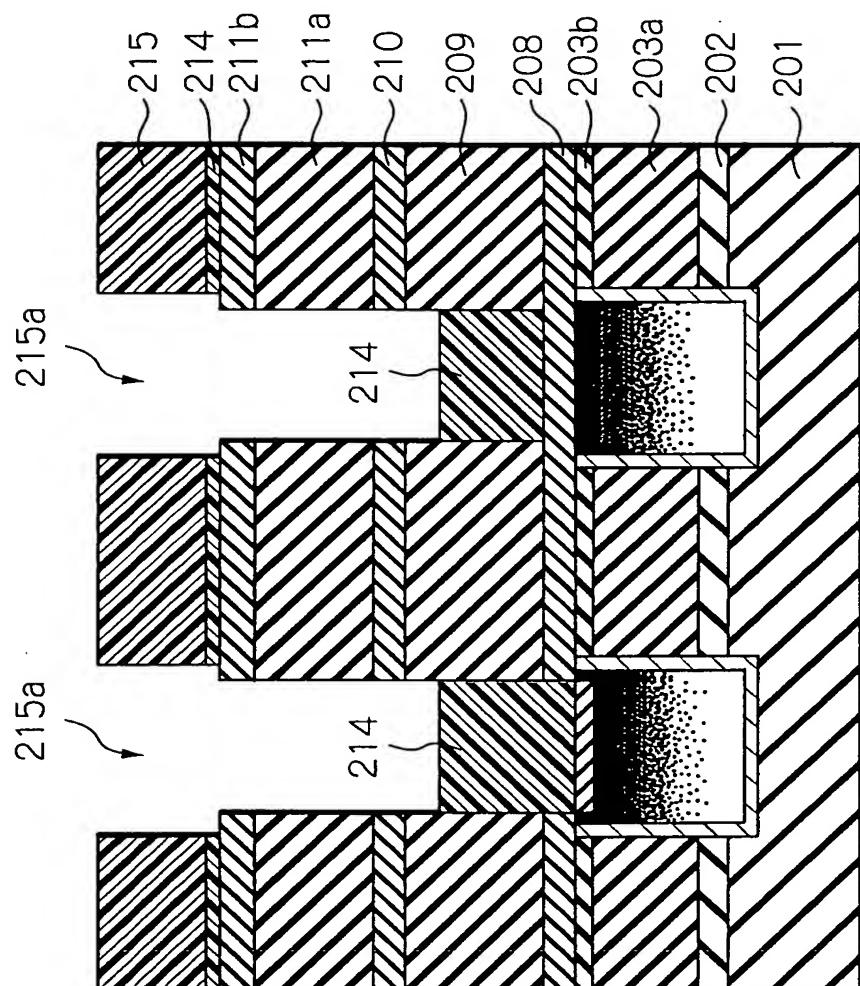
Fig. 10L



*Fig. 10M*

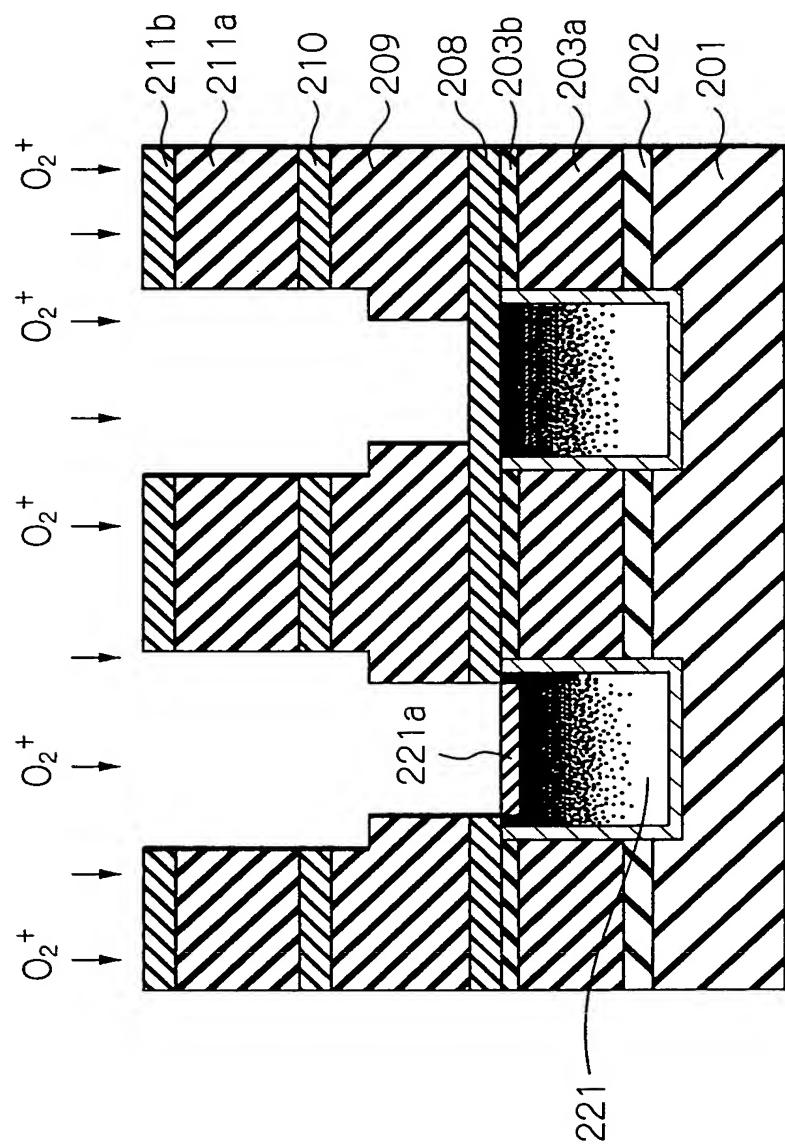


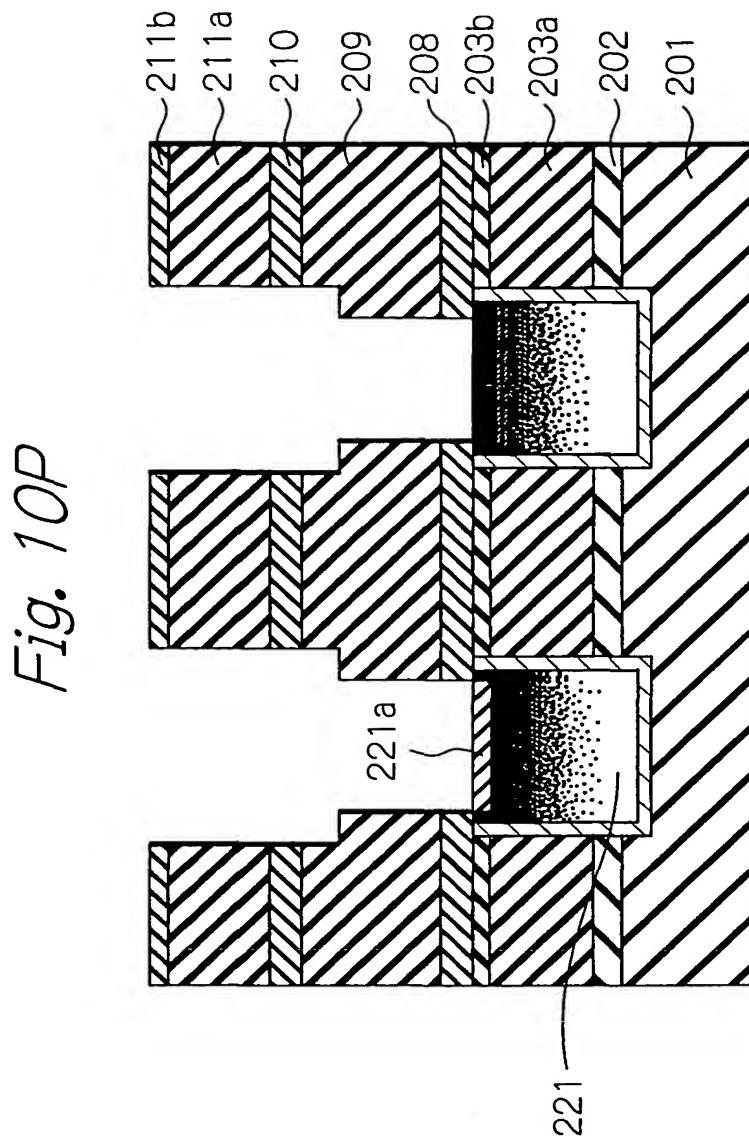
*Fig. 10N*



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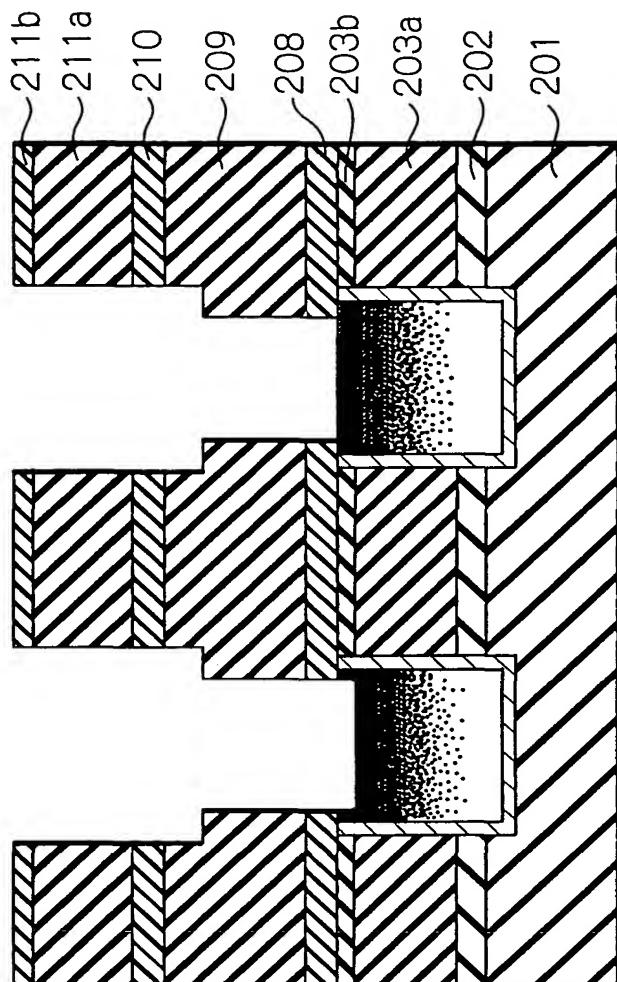
Fig. 100



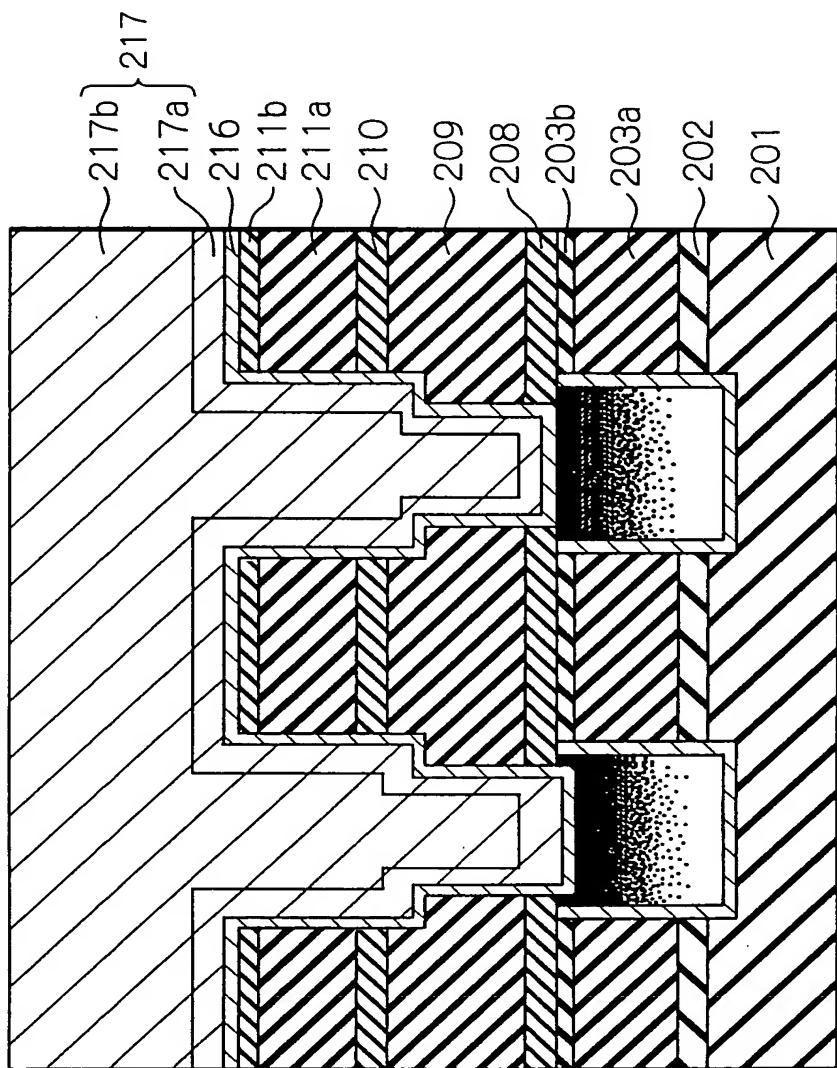


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*Fig. 10Q*

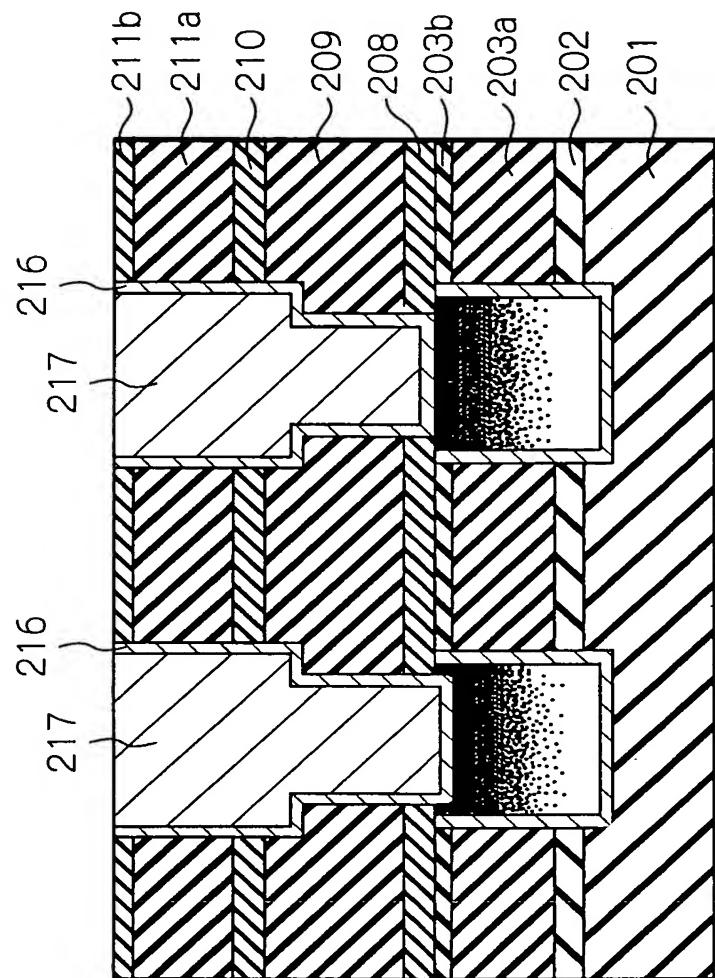


*Fig. 10R*

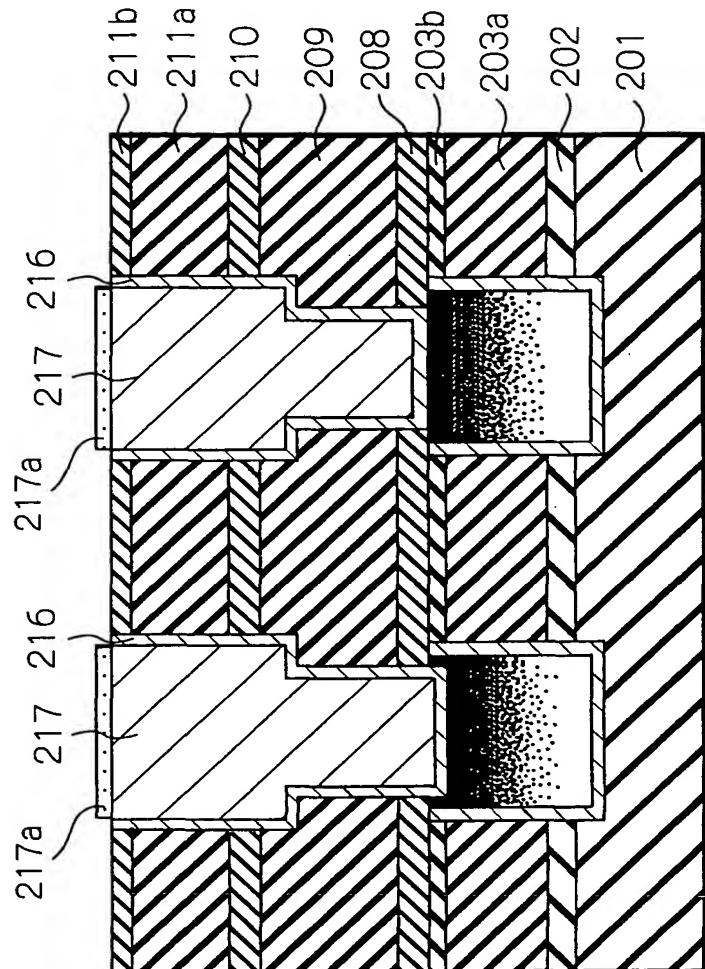


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Fig. 10S

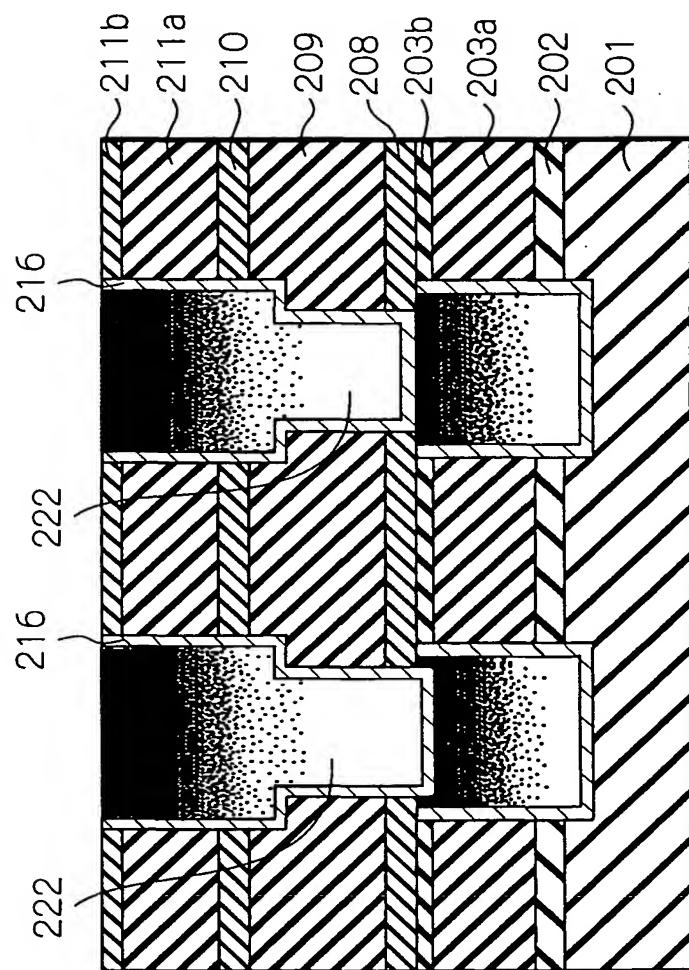


*Fig. 10T*



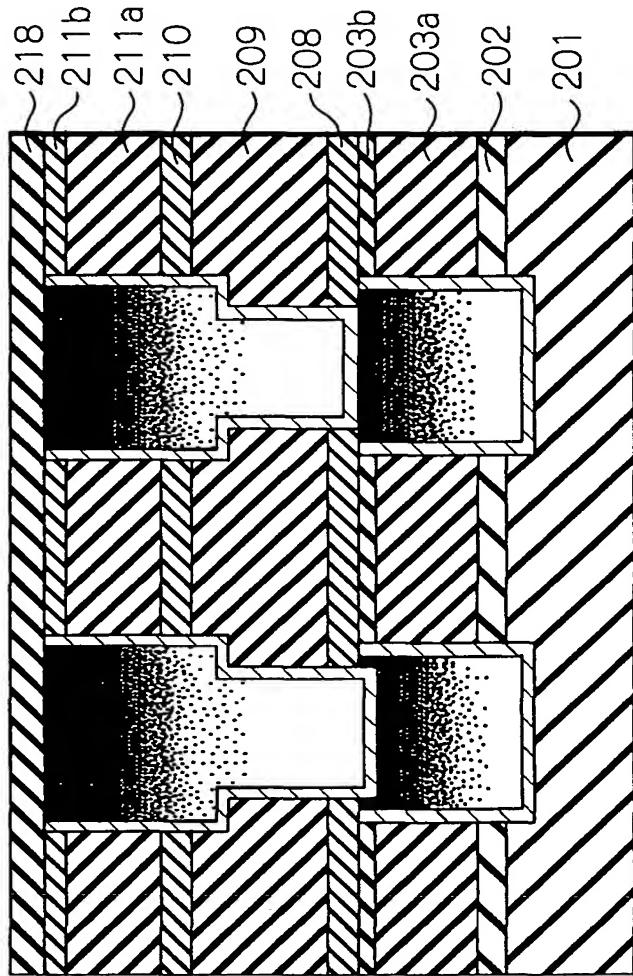
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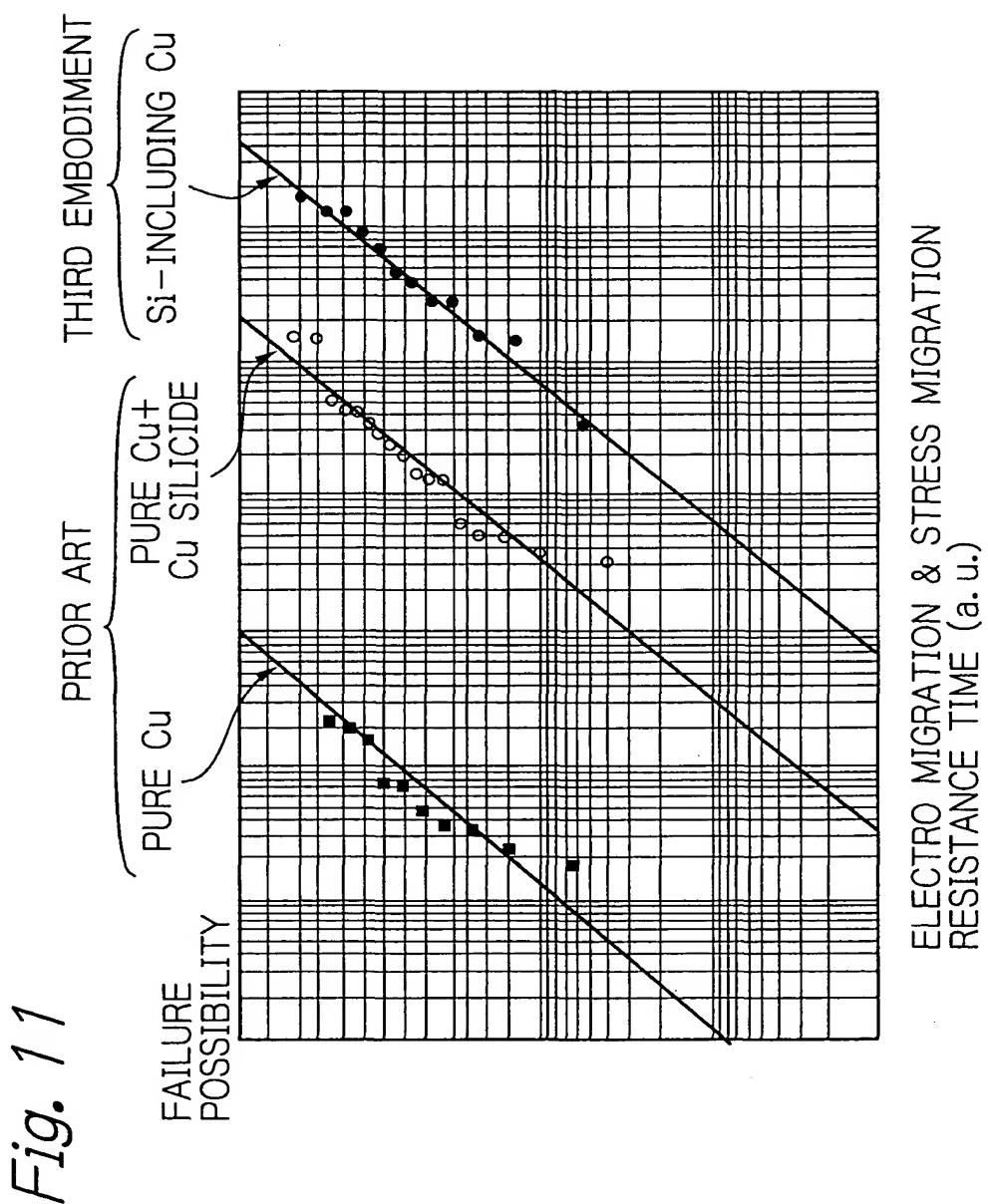
*Fig. 10U*



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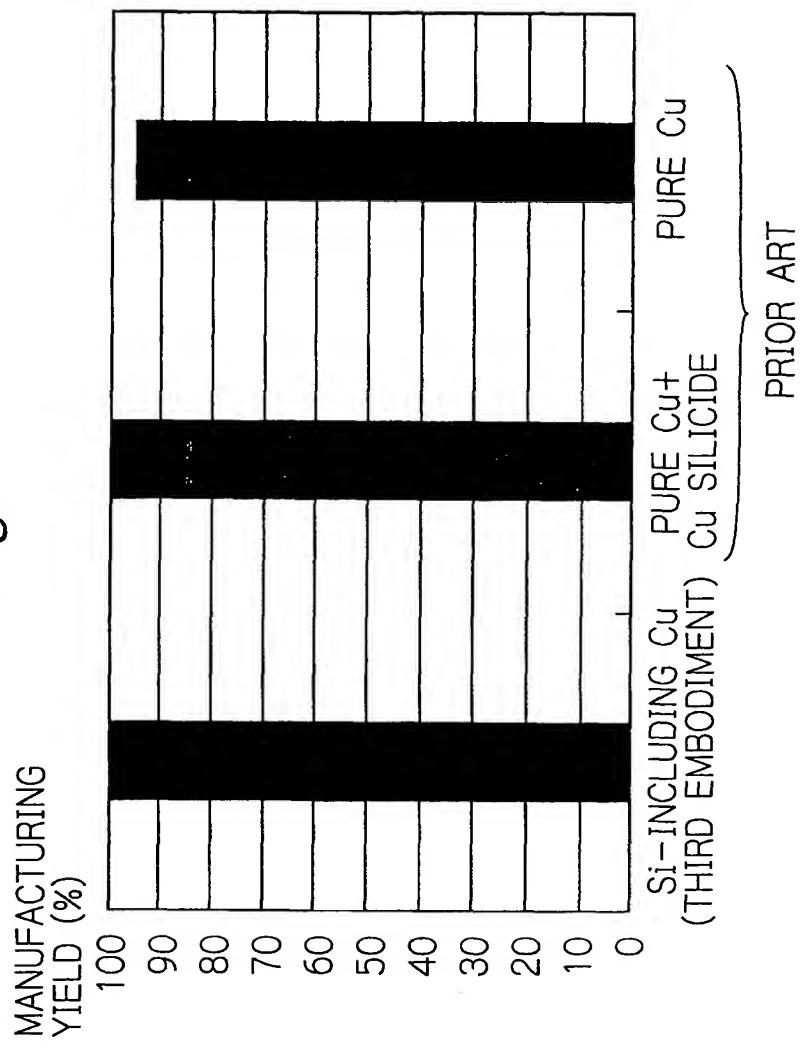
*Fig. 10V*





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Fig. 12



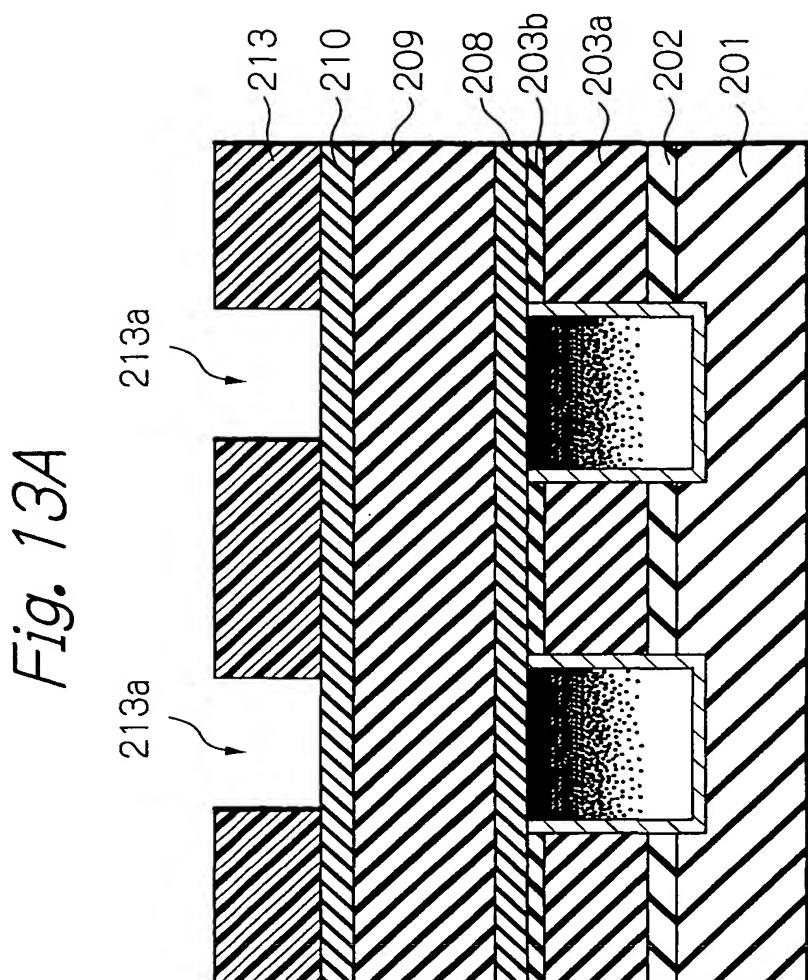
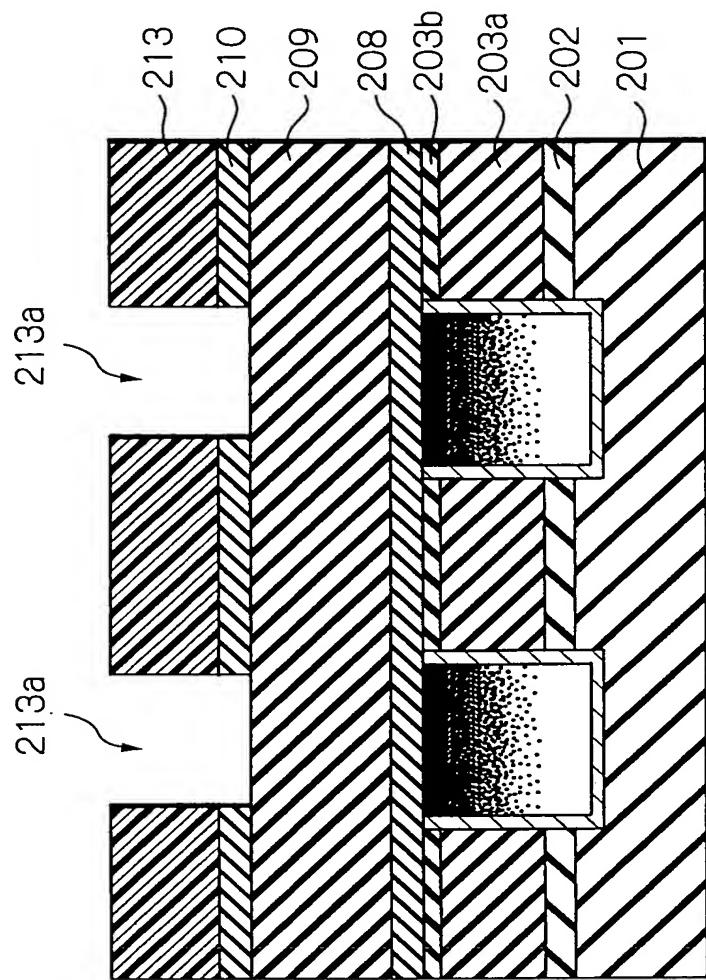
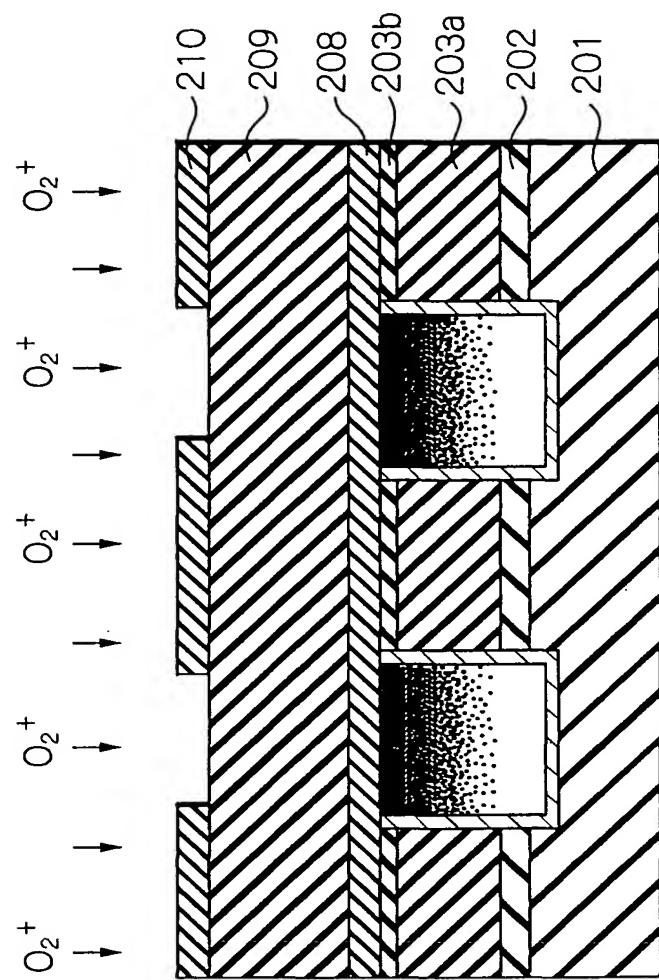


Fig. 13B

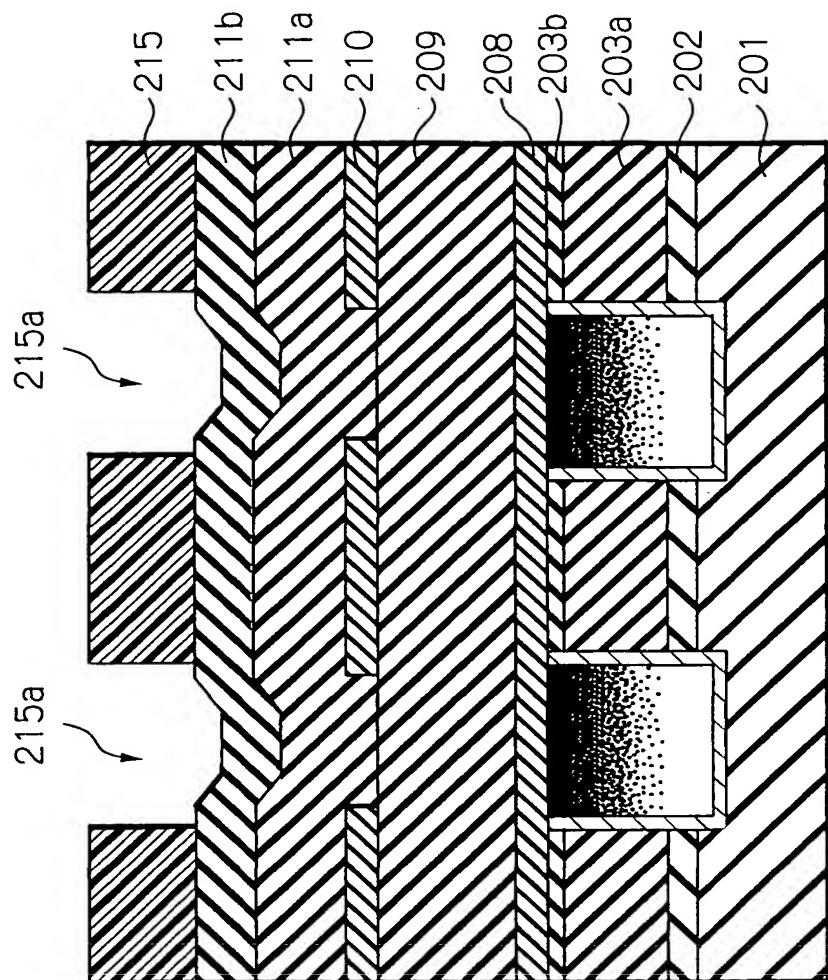


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87

Fig. 13C

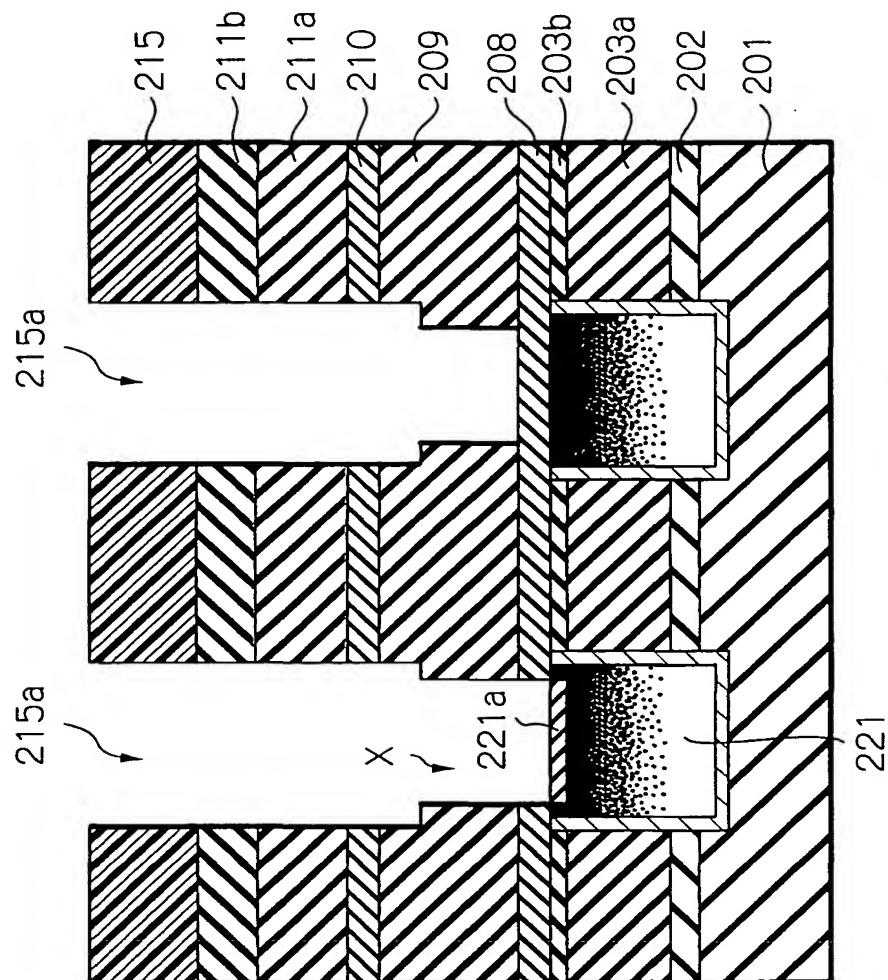


*Fig. 13D*



72/  
87

Fig. 13E



73  
87

Fig. 13F

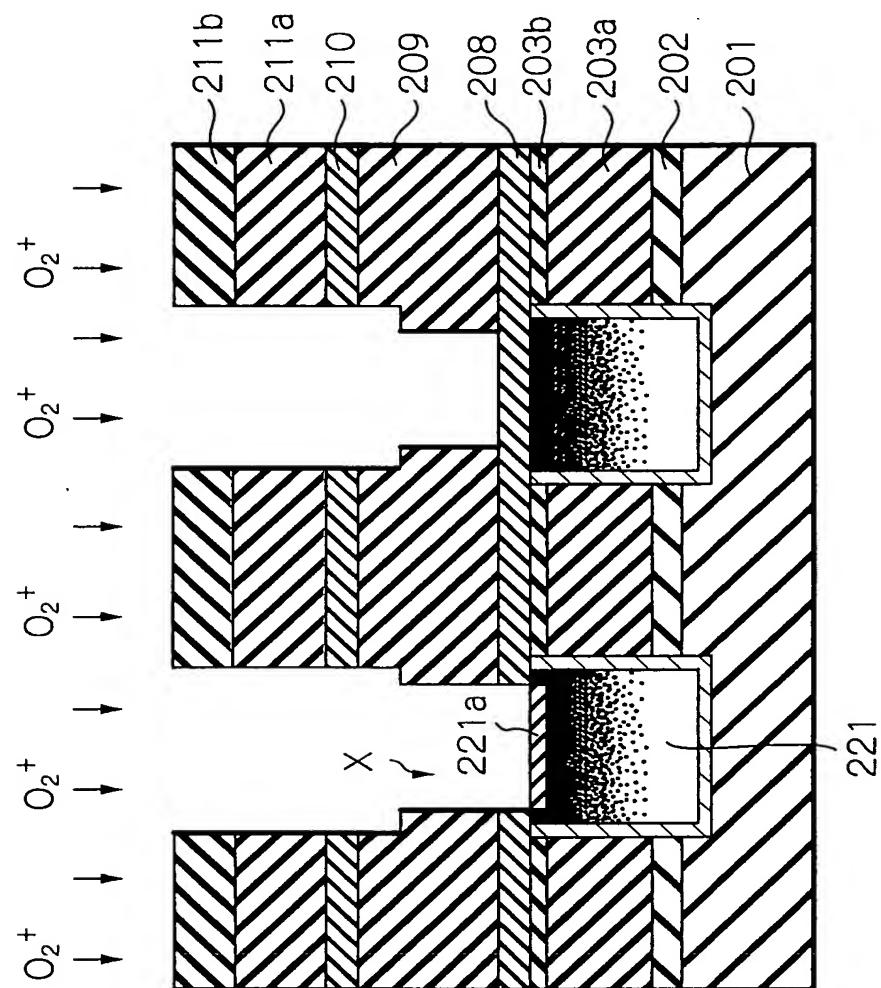
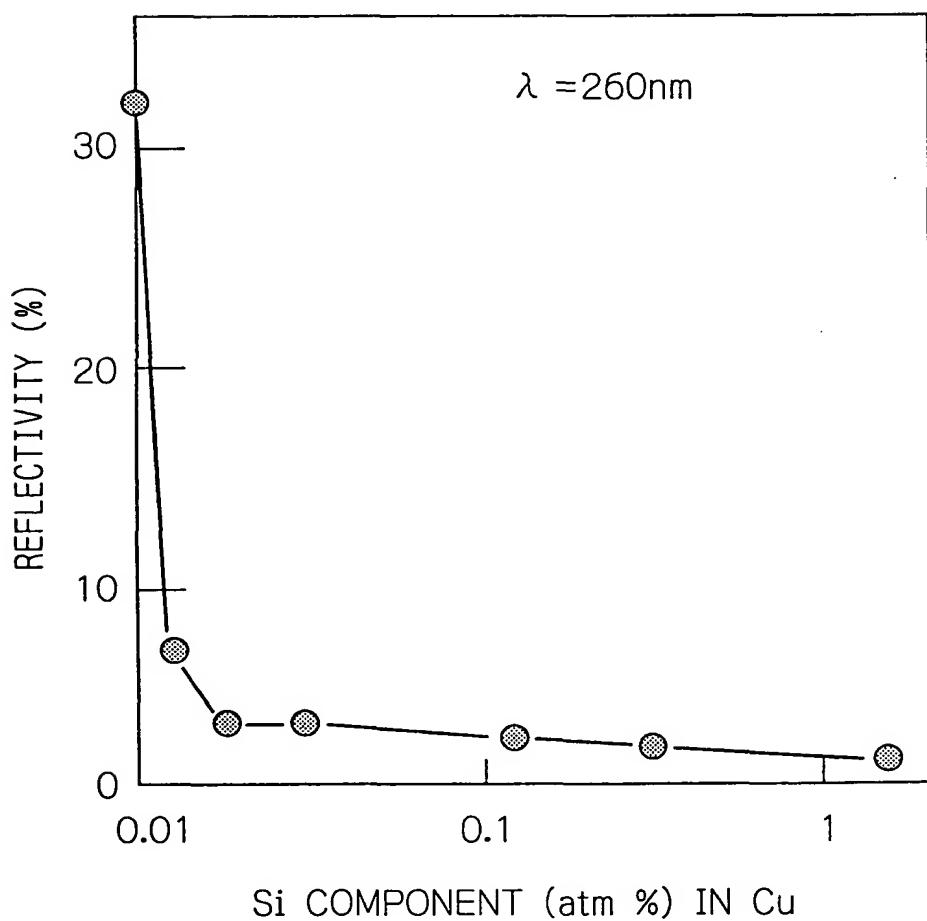
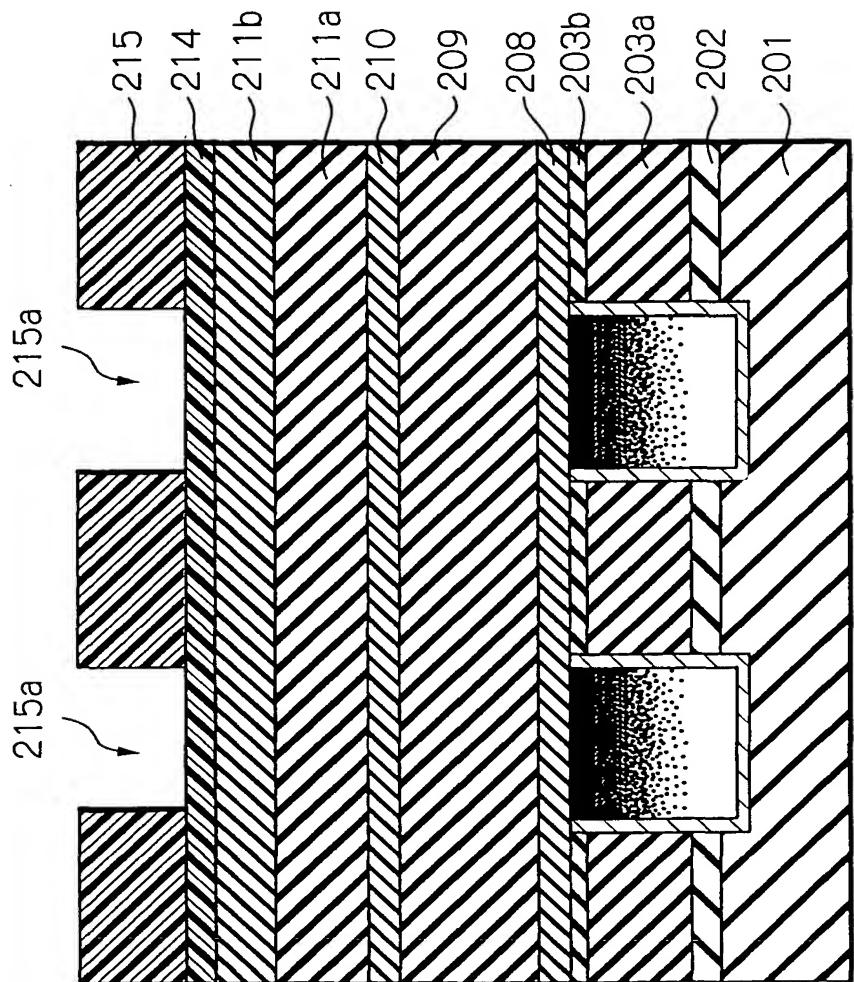


Fig. 14



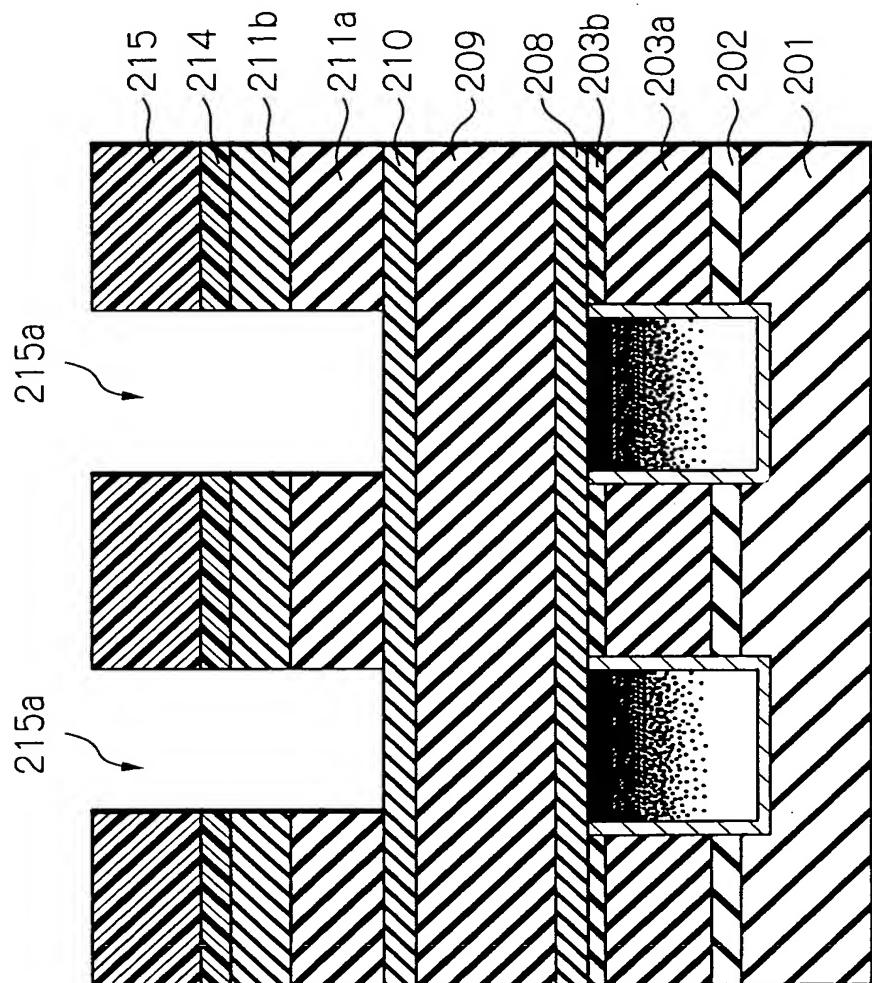
75/  
87

Fig. 15A



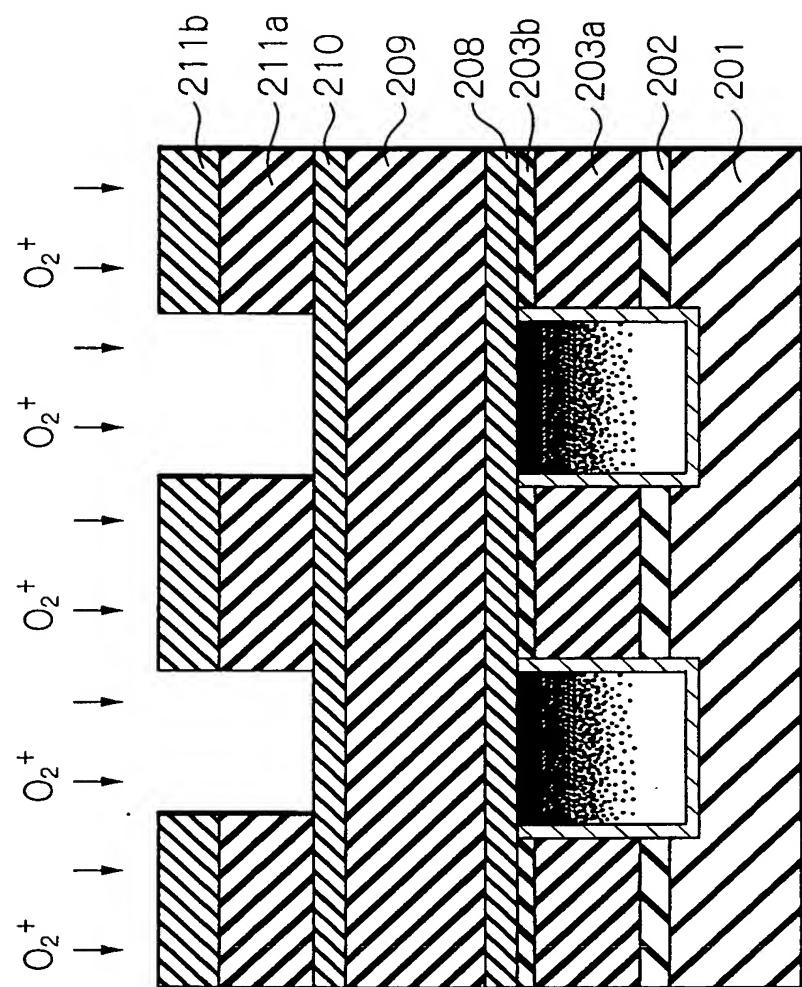
76/87

Fig. 15B



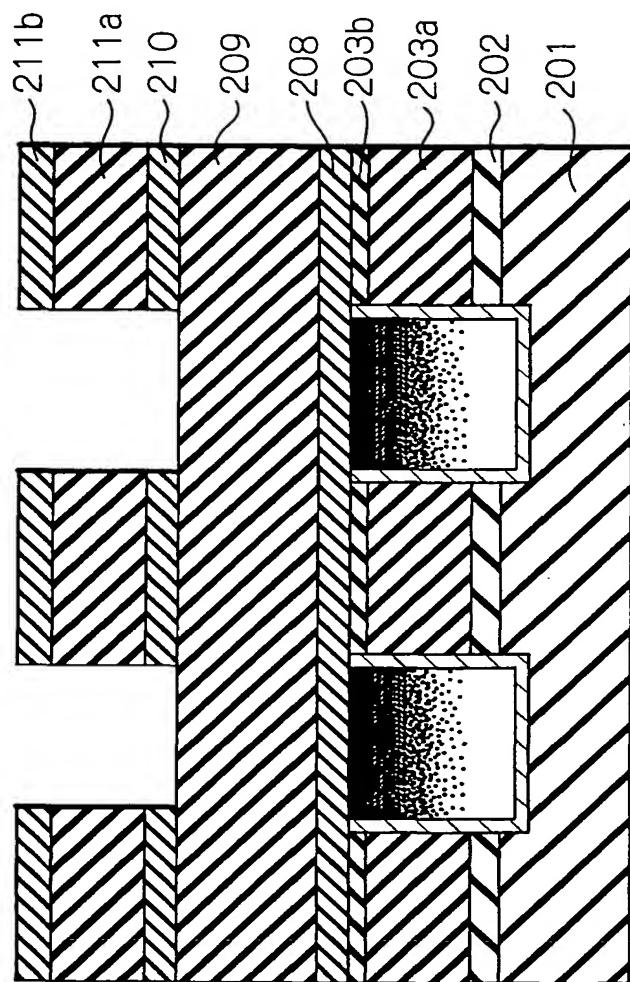
77  
87

Fig. 15C



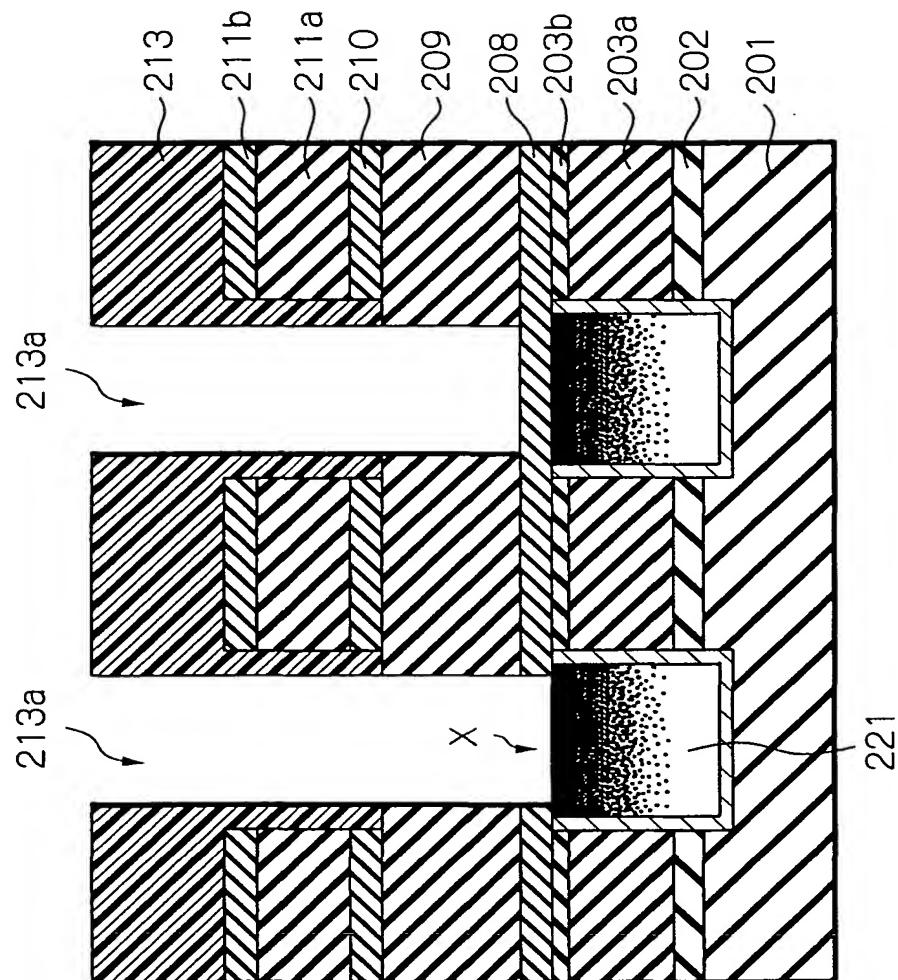
78/  
87

Fig. 15D



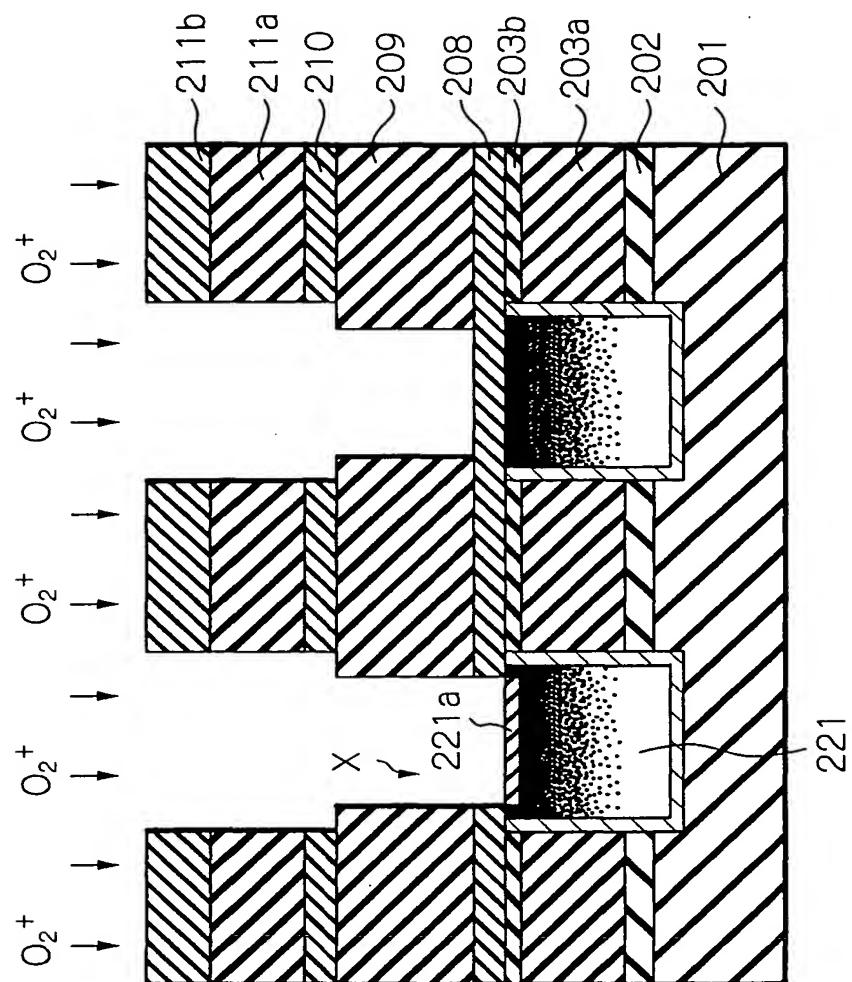
79  
87

Fig. 15E



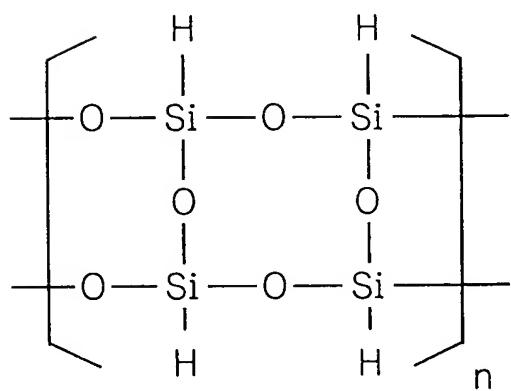
80  
87

Fig. 15F



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*Fig. 16A*



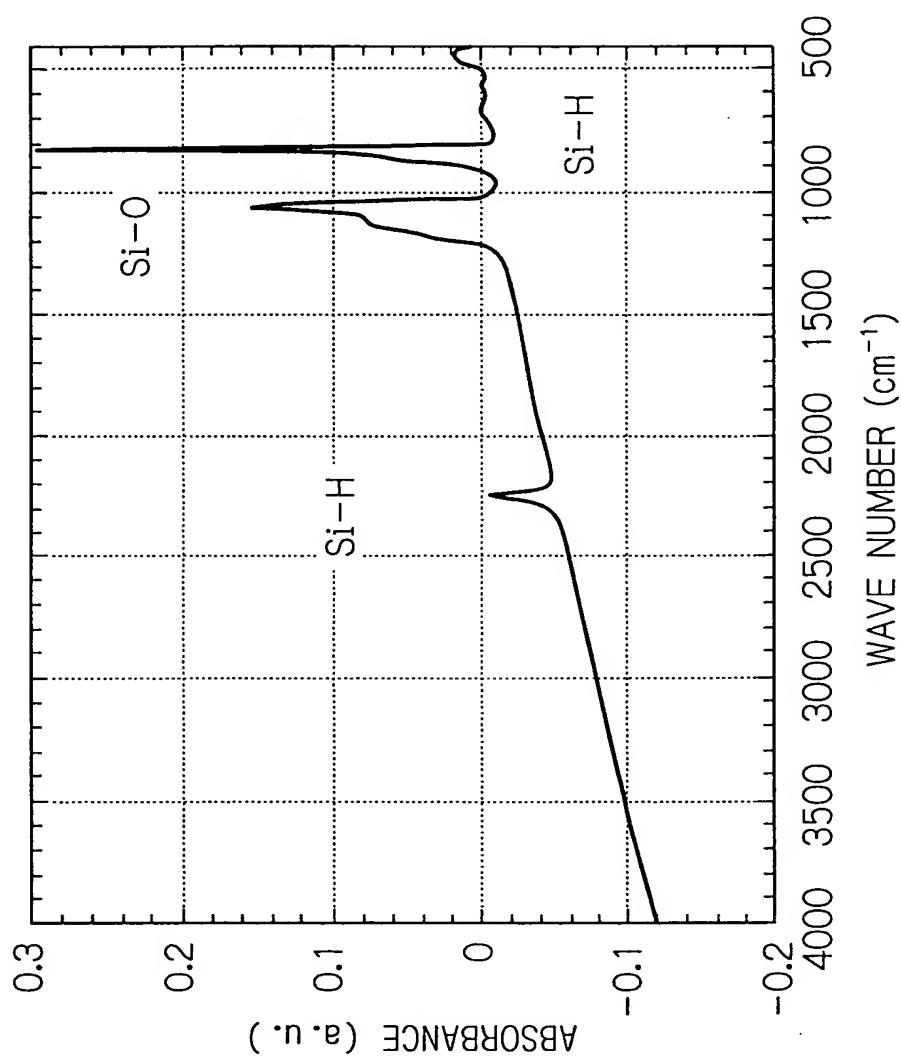
82  
87

*Fig. 16B*

DIELECTRIC CONSTANT	2.9 at 1MHz
REFRACTIVE INDEX	1.39 at 633nm
STRESS	7.00E+08 dyne/cm <sup>2</sup>
HARDNESS	0.9 Gpa
SHEAR MODULUS	6 Gpa
THERMAL EXPANSION RATIO	18 ppm/deg-C
GLASS TRANSITION POINT	none
THERMAL CONDUCTIVITY RATIO	0.31 W/mk@25deg-C

83  
87

Fig. 16C



84  
87

Fig. 16D

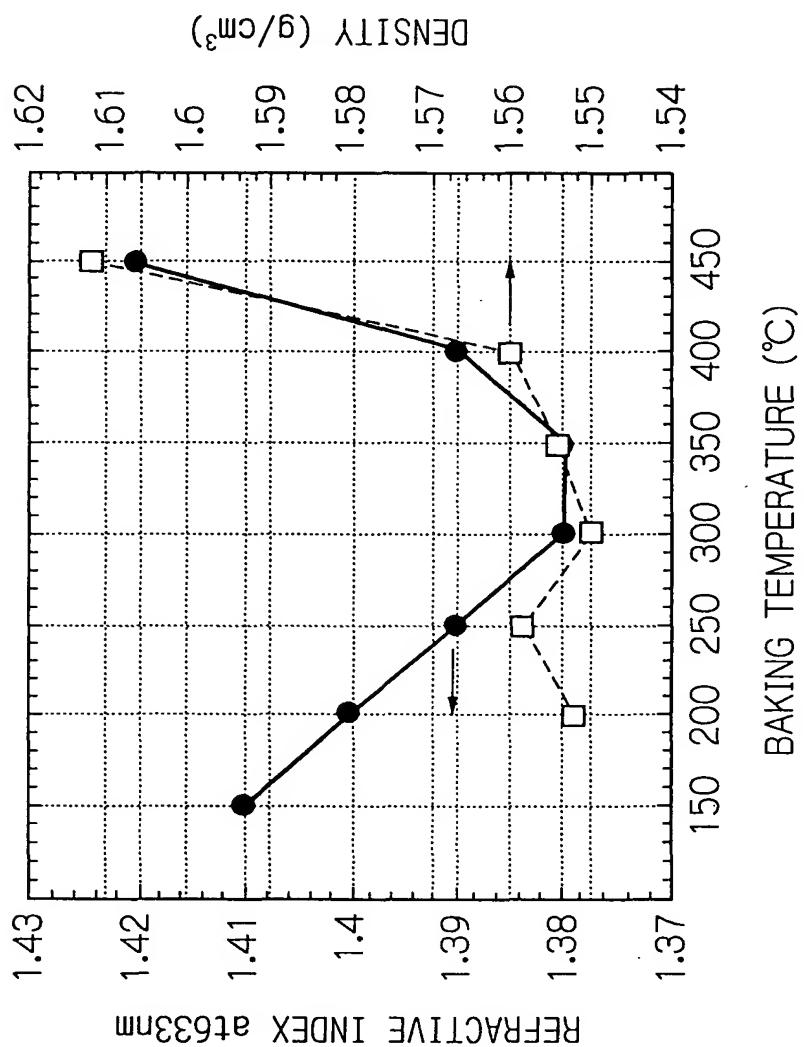


Fig. 17

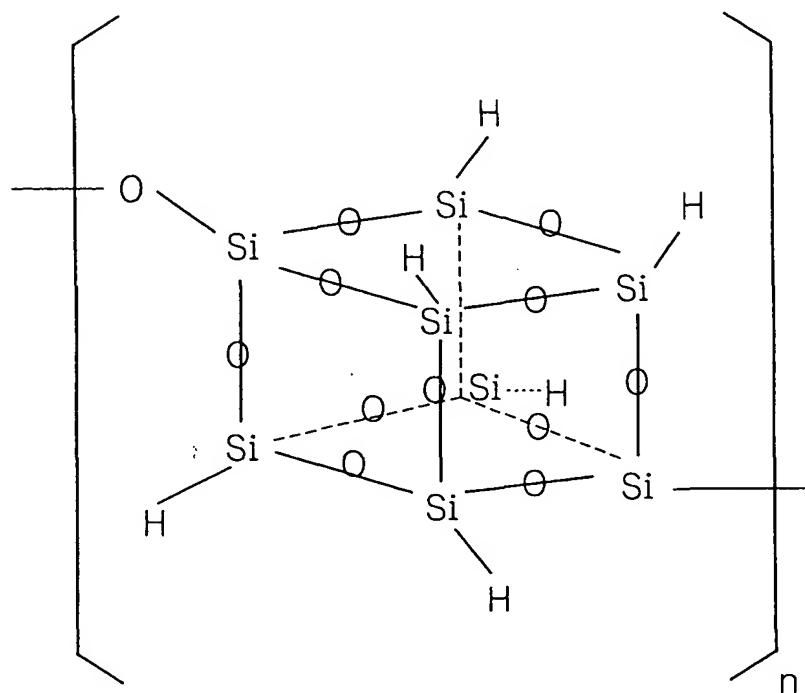
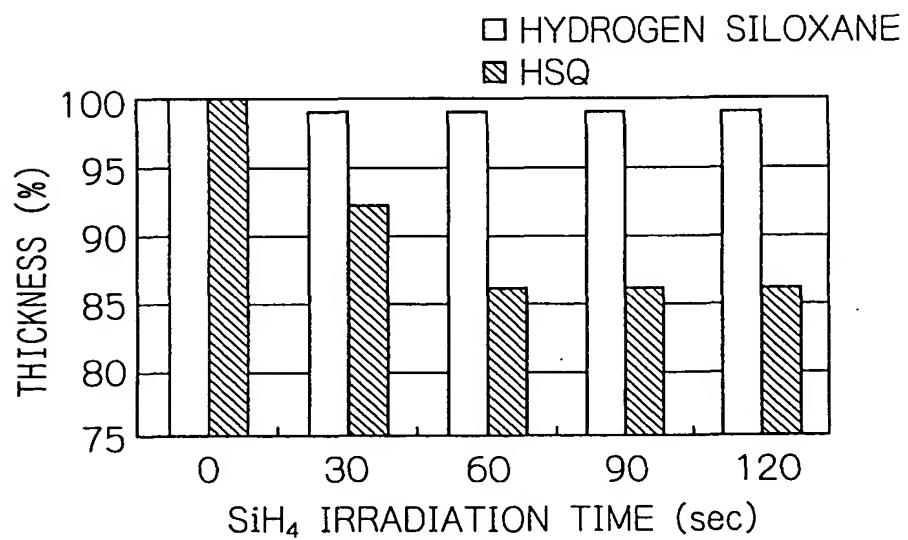
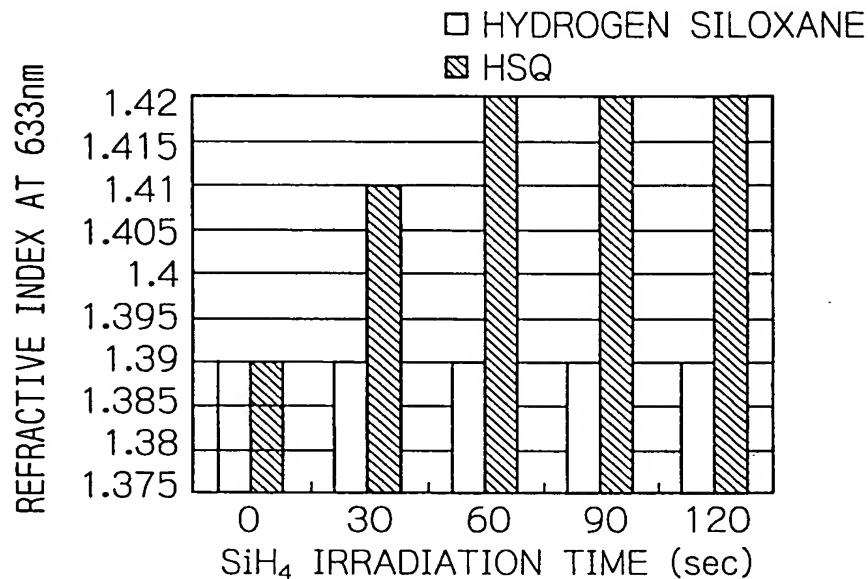


Fig. 18

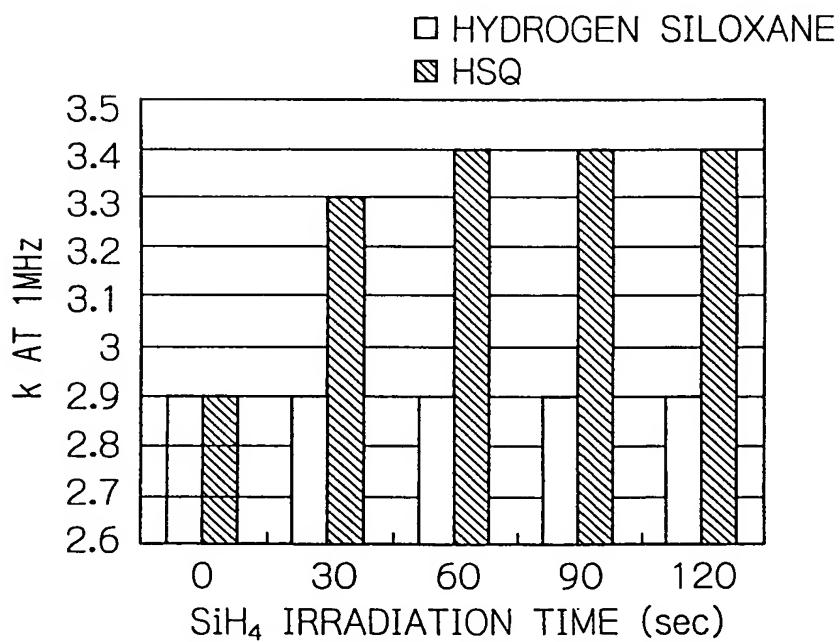


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87

*Fig. 19*

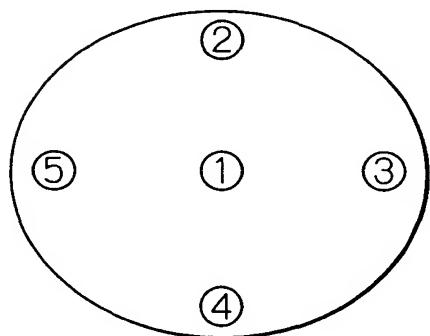


*Fig. 20*



87/  
87

*Fig. 21A*



*Fig. 21B*

	①	②	③	④	⑤
HYDROGEN SILOXANE	957	981	915	922	932
HSQ	1198	1232	1007	1101	1058

(Å)